federal register

Tuesday
January 6, 1981

Part VII

Environmental Protection Agency

Carbon Monoxide and Oxides of Nitrogen; Motor Vehicle Emission Standards—Revisions and Decisions on Applications for Waiver

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 86

[EN-FRL 1719-4]

Revised Motor Vehicle Exhaust Emission Standards for Carbon Monoxide (CO) for 1982 Model Year Light-Duty Vehicles

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: This regulation establishes CO emission standards for several 1982 model year light-duty vehicles belonging to engine families for which I have granted waivers from the standard otherwise applicable under section 202(b)(5) of the Clean Air Act, 42 U.S.C. 7521(b)(5).

EFFECTIVE DATE: February 5, 1981.

ADDRESSES: Information relevant to this rule is contained in Public Docket EN-80-16 at the Central Docket Section of the Environmental Protection Agency (EPA), Gallery I, 401 M Street, S.W., Washington, D.C. 20460, and is available for review between the hours of 8:00 a.m. and 4:00 p.m. As provided in 40 CFR Part 2, a reasonable fee may be charged for copying services.

FOR FURTHER INFORMATION CONTACT: Mr. Alex Varela, Attorney/Advisor, Manufacturers Operations Division (EN-340), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 472-9421.

SUPPLEMENTARY INFORMATION: Section 202(b)(1)(A) of the Clean Air Act ("the Act"), 42 U.S.C. 7521(b)(1)(A), requires that regulations applicable to CO emissions from light-duty vehicles or engines manufactured during or after the 1981 model year shall contain standards which require a reduction of at least 90 percent from CO emission levels allowable under the 1970 model year standards. Regulations implementing this requirement have established a CO standard, often referred to as the statutory standard for CO, of 3.4 grams per vehicle mile (gpm).

Section 202(b)(5) of the Act authorizes the Administrator, on application of any manufacturer, to waive the statutory CO standard for the 1981 and 1982 model years for any light duty vehicle model regarding which the Administrator can make certain findings. In these cases, the Act requires that I promulgate substitute CO standards for 1981 and 1982 model year light-duty vehicles as discussed below. Ford Motor Company (Ford), General Motors Corporation (GM), Chrysler Corporation (Chrysler), and American Motors Company (AMC) each submitted applications for certain light-duty vehicle models for the 1982 model year. The statutory criteria, my determinations regarding the criteria with respect to the vehicle models covered by the waiver applications, and my decisions to grant the waiver applications appear in the decision along with this rule and are published elsewhere in this issue of the **Federal Register**. In that decision, I granted a waiver covering the following vehicle models (engine families for purposes of that decision) for the 1982 model year only:

Manufacturer	Engine family
American Motors Company	151 CID
Chrysler Corporation	1.6L
	2.2L
	2.6L
	5.2L/2V
Ford Motor Company	1.6L
General Motors Corporation	1.8/2.0L

Once I have decided to grant the waiver applications for these 1982 model year vehicle models, the Act requires that I simultaneously promulgate regulations adopting emission standards not permitting CO emissions from 1982 model year vehicles of these models to exceed 7.0 gpm. Moreover, the Act further requires that I promulgate regulations establishing these standards no later than 60 days after I receive the waiver applications in question. The public has been afforded an opportunity to comment on the waiver applications at issue, and I have considered those comments in making the decision which requires the promulgation of this amended rule.

For these reasons, I find that providing notice and an opportunity to comment before final promulgation of any of the amendments contained in this rulemaking is impracticable and unnecessary.

Note.—The Environmental Protection Agency has determined that this document does not contain a major proposal requiring preparation of a regulatory analysis under Executive Orders 11821 and 12044 and OMB Circular A-107.

In addition, because the decision accompanying this rulemaking already is based on a detailed analysis indicating that this rulemaking will have a negligible effect on air quality, the Environmental Protection Agency has not prepared an Environmental Impact Statement to accompany this rulemaking as well.

Dated: December 23, 1980.

Douglas M. Costle,

Administrator.

40 CFR 86.082-8(a)(1)(ii) is revised to read as follows:

§ 86.082-8 Emissions standards for 1982 light-duty vehicles.

(a)(1) * * *

(ii) Carbon monoxide—3.4 grams per vehicles mile (2.11 grams per vehicle kilometer), except that carbon monoxide emissions from light-duty vehicles of the following 1982 model year engine families shall not exceed 7.0 grams per vehicle mile (4.35 grams per vehicle kilometer):

Manufacturer	Engine family
American Motors Corp	151 CID.
	258 CID.
BL Cars, Ltd	215 CID.
	326 CID.
Chrysler Corp	1.6 liter.
	1.7 liter.
	2.2 liter.
	2.6 liter.
	3.7 liter.
	5.2 liter/2V.
	5.2 liter/4V.
Ford Motor Co	1.6 liter.
General Motors Corp	1.8/2.0 liter.
	2.8 liter/173 CID-2V.
	3.8 liter/231 CID-2V.
Toyota Motor Co, Ltd	86.6 CID.

* * * * *

(Sec. 202 and 301(a), Clean Air Act, as amended, 42 U.S.C. 7521 and 7501(a))

[FR Doc. 81-261 Filed 1-5-81; 8:45 am]

BILLING CODE 6560-33-M

ENVIRONMENTAL PROTECTION AGENCY

[EN-FRL 1719-4a]

Applications for Waiver of Effective Date of the 1982 Model Year Carbon Monoxide Emission Standard for Light-Duty Motor Vehicles—Eleventh Decision of the Administrator

I. Introduction

This is the eleventh decision I have issued under Section 202(b)(5) of the Clean Air Act, as amended (Act), 42 U.S.C. 7521(b)(5), regarding applications from automobile manufacturers for waiver of the 3.4 grams per vehicle mile (gpm) carbon monoxide (CO) emission standard scheduled to apply to 1981 and 1982 model year light-duty motor vehicles and engines.[1]

As the introductions to the previous consolidated decisions explain, section 202(b)(1)(A) of the amended Act establishes a schedule for implementing standards applicable to CO emissions for 1977 and later model year light-duty motor vehicles and engines.[2] The 1977 amendments to the Act, however, included a new provision allowing the Administrator of the Environmental Protection Agency (EPA), under certain limited conditions, to delay for up to two model years implementation of the statutory 3.4 gpm CO standard scheduled to take effect for the 1981 and 1982 model years.[3] However, these amendments require the Administrator to promulgate interim standards in such cases which do not permit CO emissions over 7.0 gpm.[4]

From September 12 through October 10, 1980, EPA received CO waiver applications from General Motors Corporation (GM), Ford Motor Company (Ford), American Motors Corporation (AMC), and Chrysler Corporation (Chrysler). EPA held public hearings on these applications on October 10 and October 24, 1980.

In response to waiver applications received prior to those under consideration, EPA held seven sets of public hearings and issued ten decisions pursuant to section 202(b)(5)(A).[6] In those decisions, I denied waivers for certain engine families either because I determined that effective control technology[7] was available contrary to the requirement of section 202(b)(5)(C)(iii) of the Act or because the applicants failed to provide sufficient information to establish that effective control technology was not available. Furthermore, the applicants failed to establish that considerations of costs, driveability, or fuel economy gave me a basis for reaching a different conclusion. I granted the waiver applications covering the remaining engine families after determining for each of those families that the requisite technology was not available, considering costs, driveability, and fuel economy, and that each application met all of the remaining statutory criteria for receiving a waiver.

The transcript of the hearings on the waiver applications under consideration here, the materials submitted by the applicants in their waiver requests, and all other information upon which I have based my decision on these waiver requests are included in EPA Public Docket EN-80-16.[8]

This decision will address the waiver requests from these manufacturers on the basis of information from these manufacturers and from other sources.[9]

II. Summary

I am granting these waiver requests from Ford, GM, AMC and Chrysler for the 1982 model year for each of the seven engine families in question in these proceedings. I am therefore prescribing an interim CO emission standard of 7.0 gpm for the 1982 model year for these engine families.

I have determined that the public interest benefits from granting waiver requests for the six particularly fuel efficient models from manufacturers with severe economic problems under the circumstances I have identified here, outweigh the potential environmental benefits from denying these waivers. I have made these decisions because each of the applicants has established that it is essential to provide these manufacturers with sufficient production flexibility to improve the competitiveness of these six models under current market conditions by waiving the 3.4 gpm statutory CO standard for the 1982 model year.

In addition, I am granting a waiver request from Chrysler for its 5.2L/2V engine family because Chrysler established that technology would be

---

[1] The preceding decisions were published as follows: 44 FR 53376 (Sept. 13, 1979); 44 FR 69417 (Dec. 3, 1979); 45 FR 7122 (Jan. 31, 1980); 45 FR 17914 (Mar. 19, 1980); 45 FR 37360 (June 2, 1980); 45 FR 40030 (June 12, 1980); 45 FR 49876 (July 25, 1980); 45 FR 53400 (Aug. 11, 1980); 45 FR 59396 (Sept. 9, 1980); 45 FR 67753 (Oct. 14, 1980).

[2] Regulations were promulgated on Aug. 24, 1978, setting a CO standard of 3.4 gpm for 1981 and later model year vehicles. 40 CFR 86.801-8(a)(1)(ii). This standard represents at least a 90 percent reduction in CO emissions from the CO standard applicable to 1970 model year vehicles.

[3] Section 202(b)(5)(C) of the Act provides, in part: The Administrator may grant such waiver if he finds that protection of the public health does not require attainment of such 90 percent reduction for carbon monoxide for the model years to which such waiver applies in the case of such vehicles and engines and if he determines that—

(i) such waiver is essential to the public interest or the public health and welfare of the United States;

(ii) all good faith efforts have been made to meet the standards established by this subsection;

(iii) the applicant has established that effective control technology, processes, operating methods, or other alternatives are not available or have not been available with respect to the model in question for a sufficient period of time to achieve compliance prior to the effective date of such standards, taking into consideration costs, driveability, and fuel economy; and

(iv) studies and investigations of the National Academy of Sciences conducted pursuant to subsection (c) and other information available to him has not indicated that technology, processes, or other alternatives are available (within the meaning of clause (iii)) to meet such standards.

[4] As noted in previous decisions, Section 202(b)(5) of the Act requires that I make a separate assessment for each vehicle model covered by a waiver request. See, e.g., 44 FR 53376 (Sept. 13, 1979); 44 FR 69416 (Dec. 3, 1979); 45 FR 7122 (Jan. 31, 1980). Thus, my consolidated waiver decisions generally have included separate decisions for individual engine families. I have distinguished among engine families primarily on the basis of engine displacement. See note 17, second consolidated decision, 44 FR 69416, 69418 (Dec. 3, 1979).

[6] EPA has included testimony received at these seven hearings, as well as all other information considered in deciding these seven groups of waiver applications, in EPA Public Dockets EN-79-4, EN-79-17, EN-79-19, EN-80-1, EN-80-9, EN-80-13, and EN-80-14. Those dockets have been incorporated by reference into EPA Public Docket EN-80-16 for this decision.

[7] As was the case in the earlier consolidated decisions, I am using the term "technology" in this decision to encompass the statutory language "technology, processes, operation methods, or other alternatives" included as part of section 202(b)(5)(C)(iii) of the Act.

[8] This decision uses the following abbreviation:

Ford App.—Ford Application for Waiver of 1982 Carbon Monoxide Emission Standard dated October, 1980, for its 1.6 liter engine family.

GM App.—General Motors Application for Waiver of 1982 Carbon Monoxide Emission Standard dated September 12, 1980, for its 1.8/2.0 liter engine family.

AMC App.—American Motors Application for Waiver of 1982 Carbon Monoxide Emission Standard dated October 3, 1980, for its 151 CID engine family.

C. App.—Chrysler Application for Waiver of 1982 Carbon Monoxide Emission Standard dated October 10, 1980, for its 1.6L, 2. 2L, 2.6L, and 5.2L/2V engine families.

EPA Public Docket EN-80-16 can be found in EPA's Central Docket Section, Gallery I, 401 M St., S.W., Washington, D.C. 20460. Copies of materials in the docket may be obtained by writing to this address at Mail Code (A-130).

[9] See the discussion on my considerations of other sources of information in the previous waiver decisions, e.g., section III(B)(C), 44 FR 69416, 69422 (Dec. 3, 1979). I had decided to deny the GM waiver request at issue here, but after GM submitted some new contentions I announced that I would reconsider GM's request after giving the public an opportunity to comment on those contentions. 45 FR 79116 (Nov. 28, 1980). In response to this notice, EPA received comments from GM and Volkswagen of America. I will address the requests for reconsideration of earlier waiver denials included in GM's comments and VW's comments in future decisions. These comments are included in Public Docket EN-80-16.

unavailable to enable this engine family to meet the 3.4 gpm CO standard in the 1982 model year, considering cost, driveability, and fuel economy. I reached this decision primarily because of the continuing risk that, given Chrysler's current economic circumstances, Chrysler and the public could face severe adverse economic repercussions if, in light of the driveability characteristic of the 5.2L/2V engine family, I were to make an incorrect projection regarding the availability of effective emissions control technology.

III. Discussion

A. Available Technology and the Public Interest

The decisions I have made here on whether to grant or deny the requested waiver turn primarily on public interest considerations involved in marketing these engine families and what technology most likely would be available to enable the engine families in question to meet the 3.4 gpm CO standard for the 1982 model year. Section 202(b)(5)(C)(iii) of the Act expressly assigns an applicant the task of establishing that effective CO control technology is not available, taking into account costs, driveability, and fuel economy.

As was the case in the previous CO waiver decisions, this decision relies on information contained in the waiver application and other information found in the public record.[10] I conclude on the basis of this information that the applicants have adequately established that the risks that could rise were I to deny these waiver request at issue are significant enough that I must conclude that the requisite technology, considering costs, driveability , and fuel economy, is not available for the engine families in question, the GM 1.8/2.0L, Chrysler 1.6L, 2.2L, 2.6L, and 5.2L/2V, Ford 1.6L, and AMC 151 cubic inch displacement (CID) families.

As section 202(b)(5)(C)(iv) of the Act requires, I have considered the results of NAS studies and investigations conducted under section 202(c) of the Act regarding available technology, processes, or other alternatives. The findings of the available NAS studies do not contradict my assessment regarding the availability of technology for these engine families.[11]

[10] See note 6, supra.

[11] Report of the Committee on Motor Vehicle Emissions by the National Research Council of the National Academy of Sciences, dated June 30, 1980. See also discussions of the applicability of earlier NAS studies in previous CO waiver decisions: e.g., 44 FR 53376, 53386 (Sept. 13, 1979) and 44 FR 69416, 69423, 69428 (Dec. 3, 1979). For further discussion of how the NAS findings are consistent with my determinations relating to section 202(b)(5)(C)(iii) of the Act, see, e.g., 45 FR 67753, 67756 (Oct. 14, 1980).

1. *Applicants' Positions Summarized*

a. *Ford*

Ford applied for a waiver for its 1982 model year 1.6L engine family, which includes its "Sporty Coupe" models (LN7 and EXP) scheduled to begin production on February 1, 1981, and to be introduced in the early spring of 1981, and its Escort/Lynx models scheduled to begin production in August 1981, for the usual 1982 model year introduction in the fall of 1981.[12]

In support of its waiver request, Ford contends that current emission control technology will not enable its Sporty Coupe models to meet a 3.4 gpm CO standard for the 1982 model year, and that because of these models' early introduction date, Ford has sufficient lead time to develop alternative emissions control systems or components capable of achieving the 3.4 gpm CO standard.[13] With regard to its Escort/Lynx models, Ford states that it is unsure whether it can successfully incorporate ("pull ahead") aspects of its alternative high confidence 1983 system in time for its full 1982 production to achieve 3.4 gpm.[14] More important, however, Ford argues that even if it were able to achieve 3.4 gpm, it would be forced to calibrate its vehicles in a manner likely to result in unacceptable driveability for the vehicles equipped with automatic transaxles (ATX) and substantially degraded driveability for the vehicles equipped with manual transaxles (MTX).[15] Finally, for both models Ford contends that a waiver denial would substantially harm Ford's ability to compete with imported as well as other domestic models, resulting in economic hard to Ford and harm to the public interest.[16]

b. *Chrysler*

Chrysler contended it faced uncertain production risks and did not have sufficient lead time to develop and employ technology incapable of meeting the 3.4 gpm CO standard in a new 1.6L engine family it has recently arranged to purchase from Peugeot for use in 1982 model year vehicles. In addition, Chrysler asserted that the 2.2L, 2.6L, and 5.2L/2V models for which I granted waivers for model year 1981 [17] are still capable of meeting the 3.4 gpm CO emission standard with a significant safety margin in production and with needed improvements in fuel economy and driveability in the 1982 model year. Finally, Chrysler stated that these engine families might experience difficulty in complying with the EPA high altitude regulations.[18]

c. *AMC*

AMC contended that its 151 CID engine family is incapable of meeting the 3.4 gpm CO standard with acceptable margins of safety and with acceptable driveability in the 1982 model year despite AMC's good faith efforts to improve the emissions control capabilities of this engine family. AMC further contended that, without a waiver, this family will not be capable of meeting EPA high altitude regulations, and AMC would then be unable to market this model.[19]

d. *GM*

In support of its waiver request, GM stated that, on the basis of available emission and fuel economy results, it was unable to guarantee that its 1.8/2.0L engine family could comply with the statutory emissions standard without suffering competitively disadvantageous fuel economy, driveability, and cost penalties.[20] GM contended that my granting waivers to some of GM's competitors while denying waivers to similar GM engine families resulted in an inequitable penalty for GM's good faith development of what is characterized as high technology emissions control systems (relative to other manufacturers).[21] Finally, GM asserted that the "substantial economic risk of erroneous denial" of its waiver request outweighed the risk of "insignificant impact on air quality" of an erroneous grant.[22]

2. *Waiver Applications Granted For Fuel Efficient Models: GM 1.8/2.0L, Chrysler 1.6L, 2.2L, and 2.6L, Ford 1.6L, and AMC 151 CID*

After due consideration of these arguments and the information submitted in support of them, I have concluded that each of the applicants has established that the applications covering the six small-displacement

[12] Ford App., p. III B-1. Oct. 10, 1980 Transcript, pp. 169, 193. Letter from R. M. Gulau, Ford, to Robert E. Maxwell, EPA. Exhibit II, p. 3, dated Nov. 6, 1980 (hereinafter, "letter to Maxwell").

[13] Ford App., p. III B-1. Oct. 10, 1980 Transcript, pp. 169, 225. Oct. 17, 1980 supp. submission, p. 9.

[14] Ford App., p. III A-12, III B3. Oct. 10, 1980 Transcript, pp. 185, 203-204.

[15] Ford App., p. III A-10; Tr. p. 196, 225-228; Oct. 17, 1980 supplemental submission, 4, 5, 6, 14; Nov. 3, 1980 supp. submission p. 1-2; Letter to Maxwell, Exhibit II, pp. 2-3.

[16] Ford App. pp. II 1-2; Tr. p. 170, Oct. 17 supplemental submission, pp. I 1, II 1-3.

[17] 45 FR 17914 (Mar. 19, 1980).

[18] C. App., Sections I, II, III. Oct. 24, 1980 Transcript, pp. 9-16.

[19] AMC App., pp. 4-12 Oct. 10, 1980 Transcript, pp. 74, 75.

[20] Oct. 10, 1980 Transcript, p. 16.

[21] GM App., p. 13.

[22] Id., p. 11. GM supp. submission (letter Ancker-Johnson to Costle) dated Nov. 21, 1980. Letter, Thomas M. Fisher, GM, to EPA Administrator Costle, dated Dec. 8, 1980.

four-cylinder fuel-efficient engine families in question meet the necessary statutory requirements for receiving a waiver of the 3.4 gpm statutory CO emission standard for the 1982 model year. I have reached my determination primarily on the basis of my conclusion that it is essential to the public interest to grant waivers to allow these manufacturers, which are experiencing significant economic difficulties, additional flexibility to improve the competitiveness of the four-cylinder small-displacement fuel-efficient models under consideration here,[23] even though in some of these cases marketable technology may be available even considering costs, driveability, and fuel economy. My decision to grant these waivers also stems from the risk that waiver denials may turn out to be partially erroneous; [24] that is, waiver denials might result in reducing the competitive market position these fuel-efficient models (which are vital to these manufacturers' future viability at a time when these manufacturers are attempting to recover from their recent economic problems) could attain if these applicants were able to take advantage of the added flexibility a waiver might provide.

The applicants have provided information which indicates that these comparatively small-displacement four-cylinder engine families under consideration here are used in relatively fuel-efficient vehicles. For example, the applicants have demonstrated that the GM 1.8/2.0L, AMC 151 CID, Chrysler 1.6L 2.2L, and 2.6L, and Ford 1.6L engine families are all projected to achieve 1982 fuel economy ratings equal to or better than the 1982 Corporate Average Fuel Economy (CAFE) standards.[25] None of these engine families has been previously marketed under the 3.4 gpm statutory CO emission standard, either because they are new models for 1982 or because they were marketed under a waived CO standard of 7.0 gpm in the 1981 model year.[26] For this reason, these manufacturers have not had the opportunity to improve the competitive features (specifically, cost, driveability, and fuel economy) of any of the subject engine families produced in compliance with the 3.4 gpm standard, and introduce appropriate improvements. Hence, without waivers they may have insufficient lead time or flexibility to optimize competitive features of these engine families for the 1982 model year.[27]

The flexibility which temporarily relaxing the 3.4 gpm CO standard would afford manufacturers of these fuel-efficient engine families does not by itself necessarily justify granting these waivers, particularly in those cases in which it appears that technology is available to permit a manufacturer to market an engine family with marginally acceptable cost, driveability, and fuel economy.[28] With the waiver applications at hand, however, all of these small-displacement fuel-efficient four-cylinder engine families at issue are aimed at the future market paced by fuel economy demands and thus are extraordinarily important to the overall marketing plans of the respective manufacturers and essential to their economic recovery.[29] The manufacturers before me have provided information that indicates that each manufacturer is suffering severe economic problems at the present time.[30] Each of these manufacturers has experienced significant sales losses during the 1979 model year and extraordinary financial losses for the 1979 fiscal year.[31] These problems have resulted in significant adverse social and economic repercussions for the

[23] Chrysler 1.6L, 2.2L, 2.6L; Ford 1.6L; AMC 151 CID; GM 1.8/2.0L.

[24] See, e.g., *International Harvester* v. *Ruckelshaus*, 478 F. 2d 615, 641, (D.C. Cir., 1973). See also, 45 FR 53400 (Aug. 11, 1980).

[25] The Corporate Average Fuel Economy standard is 24 mpg for the 1982 model year. 49 CFR 531.5; § 502, 503, Energy Policy and Conservation Act (EPCA), Pub. L. No. 94–63, 89 Stat. 871 (1975). The individual CAFE fuel economy figures for each model is an average which is weighted 55 percent urban cycle and 45 percent highway cycle. EPCA § 503(d)(1).

Information in the record indicates that these engine families will achieve the 24 mpg 1982 CAFE standard. See, e.g., the 1981 EPA Gas Mileage Guide (September 1980 edition), which lists fuel economy figures (for the urban cycle) for the following models (these figures should indicate the potential urban component of the CAFE value for that model): Ford 1.6; AMC 151 CID; Chrysler 2.2L, 2.6L, and 1.7L (the 1.6L engine family considered here will be used in the same vehicle models as the 1.7L engine family and should be expected to achieve similar fuel economy characteristics—see, e.g., Chrysler App., p. II–3; Oct. 24, 1980 Transcript, pp. 18, 26, 101, 103, 105, 106). GM projected 1982 combined fuel economy mileage figures of 27–30 mpg for its 1.8/2.0L engine family. Oct. 10 1980 Transcript, pp. 18, 18A, 44. Each of the applicants projects its respective models to achieve 1982 highway fuel economy substantially better that the urban figures and a composite fuel economy figure above the CAFE standard. See, e.g., Chrysler Application for waiver of the 1981–1982 Model Year Carbon Monoxide Standard, July 3, 1979, Vol. III B, section C, data on cars J–01, 02, 03, 05, 06; 1981 Model Year EPA Certification Test Log, vehicles D00–101B, D00–103B, D04–15B, D04–29B, D04–76B, D04–77B, D032R, D033, D181, at 13:18:43, 13:36:38, Nov. 21, 1980; Chrysler Petition for Reconsideration, Oct. 16, 1979, pp. A–11, 17, D–Z; Chrysler supp. submission, July 20, 1979, response to question 9; Nov. 3, 1979 Transcript of Proceedings—In the matter of Applications for Waiver of 1981 Model Year Carbon Monoxide Emissions Standards, pp. 191, 192; Oct. 10, 1980 Transcript pp. 18, 44, 64, 98, 139, and 170; AMC supp. submission Oct. 24, 1980 pp. 5–13; 24, 1980 Transcript, p. 14.

[26] The Chrysler 2.2L engine family is employed in Chrysler's new "K-car" model introduced in model year 1981. The 1.6L engine family is a new engine family Chrysler has purchased from Peugeot which Chrysler will be using in model year 1982 in addition to its presently marketed 1.7L engine. C. App., Section I, II. Chrysler has previously received waivers for its 2.2L and 2.6L engine families for the 1981 model year. 45 FR 17914 (Mar. 19, 1980). GM intends to use its 1.8/2.0L engine family in its new "J-car" model it will introduce early in 1981 for the 1982 model year. GM App., Section I. Ford plans to use its 1.6L family in its new 1982 model year "sporty coupe" model it will introduce in the spring of 1981 and in its Escort/Lynx model scheduled for normal 1982 model year introduction. Ford App., Section III. Oct. 10, 1980 Transcript, pp. 172–174. Ford received a waiver for the 1981 model year for this engine family. 45 FR 53400 (Aug. 11, 1980). AMC received a waiver for the 1981 model year for its 151 CID engine family. 45 FR 7122 (January 31, 1980).

[27] See letter from Thomas M. Fisher of GM, to EPA Administrator Costle, dated Dec. 8, 1980, at 3–4 (hereinafter Fisher-Costle letter). Manufacturers that have successfully certified and marketed vehicle models under the statutory 3.4 gpm CO standard have the flexibility to "carry over" 1981 certification results for the 1982 model year and avoid incurring the engineering expense and effort necessary for a certification program. In addition, those manufacturers could apply their engineering efforts toward improving competitive features of these vehicles meeting the 3.4 gpm standard using the production and marketing experience.

[28] For example, available information fails to indicate that marketable technology is unlikely to be available to permit GM's 1.8L/2.0L engine family to meet the 3.4 gpm CO standard, even considering cost, driveability and fuel economy. See my earlier decision on this engine family, dated Nov. 20, 1980.

[29] For App., Section II. Letter, Ancker-Johnson (GM) to Costle, dated Nov. 20, 1980. Fisher-Costle letter, dated Dec. 8, 1980 at 4. Oct. 10, 1980 Transcript, pp. 13, 70, 104, 105, 170. Oct. 24, 1980 Transcript, p. 14. Automotive News, Nov. 17, 1980, "Escort/Lynx" and K-Car in a Difficult New-Car Market", Joseph Bohn, pp. 1, 45.

These engine families (for which these manufacturers have applied significant resources in research, development, and retooling) make up a large and increasing proportion of the total sales of each of these manufacturers. See, e.g., Automotive News, Nov. 3, 1980, "1980 V–8 Output Cut in Half," Joseph Bohn, pp. 1, 54; GM App., pp. 12–13; Ford supp. submission, Oct. 17, 1980, exhibits I, III–G; C. App., pp. II–3, III–1. Oct. 10, 1980 Transcript, pp. 13, 14, 104–106, 169, 170; Oct. 24, 1980 Transcript, pp. 13, 14, 103, 105, 106. See also, generally, U.S. International Trade Commission Decision on Certain Motor Vehicles, Publication 1110, December 1980.

[30] AMC supp. submission, 1980 Quarterly Reports. Chrysler Nov. 4, 1980 supp. submission. Ford App., Section II. GM supp. submission, p. 15. Oct. 10, 1980 Transcript, p. 70. Oct. 24, 1980 Transcript, pp. 117–120.

[31] GM sales declined 22 percent compared to the same 12-month period last year, Wall St. Journal, Dec. 5, 1980, p. 29, while GM reported record losses of $824 million for the last four quarters. New York Times, Oct. 28, 1980, "Record Loss Listed by GM", Steve Lohr, p. 1. GM further reported that 1981 fourth quarter sales have been substantially lower than expected. Fisher-Costle letter, dated Dec. 8, 1980, at 4. AMC sales worldwide are down 14.9 percent and AMC has reported twelve month losses of $155.7 million, and layoff of 5,900 of 23,400 employees (AMC supp. submission, Oct. 24, 1980, p. 24). Chrysler's production is down 37 percent over last year (Wall St. Journal, Dec. 5, 1980, p. 29) and Chrysler lost $1.1 billion in 1979 and $1.5 billion in the first three quarters of 1980. Chrysler Nov. 4, 1980 supp. submission. Ford's production declined 29 percent over last year (Wall St. Journal Dec. 5, 1980, p. 29) and Ford also reported record losses of $1.51 billion for the last 12 months. Ford App., section II. Oct. 17, 1980 supp. submission, section I.

country, including extensive layoffs, increasing trade deficits and effects on suppliers and related industries.[32]

Granting waiver requests for the engine families at issue could allow these manufacturers the flexibility to improve the competitive marketability of some features [33] of these important engine families at a time when these financially troubled manufacturers are depending upon successful marketing of these particular engine families in order to achieve economic recovery. Each of these manufacturers has already expended a considerable amount of cost and effort in attempting to meet the 3.4 gpm CO emission standard [34] and to retool for these more efficient models, thereby further limiting the resources they have available to otherwise improve the competitiveness of these models.[35] In light of these circumstances, I have determined that it is in the public interest to grant all of these waiver requests for these fuel-efficient engine families because of the risk that denial of these waivers could limit the manufacturers' flexibility to improve the competitiveness of these important engine families and ultimately interfere with the future of these automobile manufacturers.[36]

In *International Harvester Co.* v. *Ruckelshaus,*[37] the United States Court of Appeals for the District of Columbia Circuit reviewed the Administrator's decision to deny manufacturers' requests for a one-year suspension (from 1975 to 1976) of the effective date of the statutory hydrocarbon (HC) and CO standards mandated by the 1970 version of the Act. The Court stated, among other things, that the Administrator should have considered the risks associated with the possibility of erroneously granting or denying those requests. The Court indicated that the Administrator should balance the economic costs (in terms of jobs lost and misallocated resources) possibly associated with an erroneous or only partially accurate denial versus the possible environmental benefits lost through an erroneous grant.

Under the current section 202(b)(5) of the Act, the gravity of the economic and other risks which both a waiver applicant and the public face from the possibility of an erroneous denial depends on the following two factors: (1) The likelihood that the denial, in fact, will turn out to be either erroneous or only partially accurate and (2) the severity of the adverse economic consequences which could occur as the result of an erroneous or partially accurate denial.[38]

In this case, I find that there is a significant likelihood that a decision denying any one of these waiver requests could turn out to be only partially accurate.[39] At a time when these manufacturers need to be as competitive as possible to effect an economic recovery, a partially accurate denial would risk diminishing their ability to adequately compete in this fuel economy oriented market of the future [40] thereby delaying planned recovery, continuing unemployment problems increasing economic stagnation, and potentially limiting the increase in the number of these fuel efficient vehicles in use.

Alternatively, the environmental benefits from denying waiver requests for any one or all of these engine families would be insignificant.[41] Vehicles using these engine families are projected to account for only about 15% of total 1982 model year domestic sales.[42] Adding the number of engine families which already have waivers for the 1982 model year increases this total to only 27% of projected 1982 model year U.S. sales. This is consistent with my previous findings that the CO waiver proceedings to date have generally shown that the 3.4 gpm CO emission standard is generally achievable with marketable cost, driveability and fuel economy, and that waivers are appropriate only in extenuating circumstances, such as those identified here. In addition, manufacturers have generally made significant efforts to reduce emissions even from those engine families under consideration here which have received waivers for the 1981 model year while preserving the ability of those families to maintain strong competitive positions in the domestic market. For example, the engine families considered here which already had waivers to the alternative 7.0 gpm CO emission standard generally exhibited CO emissions in production which were close to or marginally below 3.4 gpm.[43]

In addition, the air quality effect of granting waivers to other engine families, if any, which may share similar public interest considerations and incur similar adverse risks comparable to these fuel efficient engine families is also quite likely to be insignificant.[44] Finally, these engine families will continue to have to meet other regulatory requirements designed to control emissions of in-use vehicles and for which Congress provided no such flexibility to discriminately relax requirements.[45]

While Congress might not have envisioned the waiver process as a mechanism which could permit applicants to attain highly competitive technology (as opposed to reasonably marketable technology considering cost, driveability and fuel economy characteristics) when it prescribed the criteria under which I may grant a

[32] See e.g., Wall St. Journal, October 30, 1980, p. 1, "Chrysler Posts 3rd Period Loss of $489.7 million," Leonard M. Apcar; Oct. 29, 1980, "Ford Reports a Loss of $595 million, Record for any U.S. Auto Concern, p. 1. New York Times, Oct. 30, 1980, "$490 Million Loss Listed by Chrysler"; November 3, 1980, "Ford Suffers Biggest Loss Ever . . . $567 Million Loss at GM Next Biggest and Chrysler Drops $490 Million" Edward Lapham, pp. 1, 54. United States International Trade Commission Decision on Certain Motor Vehicles, Publication 1110, December 1980, pp. A27–76. Oct. 17, 1980 Ford supp. submission, p. 2.

[33] A waiver to 7.0 gpm may allow a manufacturer flexibility to calibrate an engine family to achieve better fuel economy, driveability or costs, e.g., a waiver will allow Ford and AMC to optimize driveability. Oct. 17, 1980 Ford supp. submission, pp. 4, 7, Exhibits I–L. November 3, 1980, Ford supp. submission, Exhibit A. Oct. 10, 1980 Transcript, pp. 100, 128, 169, 222–228.

[34] See also section IIIC. All of these engines are already achieving emission levels close to or under the 3.4 gpm standard. See note 43, supra.

[35] See e.g. GM's contention regarding competitive disadvantage. GM App., p. 13. See also *International Harvester,* 478 F. 2d 615, 637–638 (D.C. Cir., 1973).

[36] See generally, *International Harvester,* 478 F. 2d 615, 633, 641 (D.C. Cir., 1973); 45 FR 53401, 53403 (Aug. 11, 1980).

[37] 478 F.2d 615 (D.C. Cir., 1973).

[38] *Cf. Ethyl Corp.* v. *Environmental Protection Agency,* 541 F.2d 1, 18 (D.C. Cir. 1976) (stating that the Administrator's finding under section 211 of the Act that lead particulates "will endanger the public health and welfare" is composed of reciprocal elements of probability and severity).

[39] *Cf., International Harvester, supra,* 478 F. 2d at 641: "[A] partially accurate decision would allow companies to produce but at a significantly reduced level of output." Here, companies are already producing at a lower output due to market conditions, and a waiver denial at this time likely could limit the flexibility these companies need to improve marketability (by improving driveability for example) and sales.

[40] See, e.g., Fisher-Costle letter, dated Dec. 8, 1980, at 3.

[41] See also section III–B.

[42] See, e.g., October 24, 1980 Transcript, p. 14. Oct. 10, 1980 Transcript, pp. 16, 144. Automotive News, Nov. 17, 1980, "Escort/Lynx and K-Car Star in a Difficult New-Car Market," Joseph Bohn, pp 1, 45. This projection assumes 1982 model year domestic sales of about ten million vehicles.

[43] Average CO emission results for production vehicles receiving waivers to a 7.0 gpm CO emission standard (from samples of various sizes which were tested by these manufacturers):

AMC: 151 CID—3.2 gpm.

Ford: 1.6L—1.61–4.14 gpm (range for four pre-production vehicles).

Chrysler: 2.2L–3.5 gpm; 2.6L–2.6 gpm; and 5.2L–3.3 gpm.

See, e.g., AMC App., p. 14; C. App., p. II–11, 12; October 17, 1980, Ford supp. submission, Exhibits E–L (confidential); Oct. 10, 1980 Transcript, p. 109.

[44] *Cf.*, discussion of a similar concern in my eight CO waiver decision. 45 FR 53401, 53404 (Aug. 11, 1980).

[45] See, e.g., Oct. 10, 1980 Transcript, p. 176. However, these engine familes will receive a waiver of the high altitude standard consistent with the waivers granted here. 45 FR 66984 (Oct. 8, 1980).

waiver request, the current economic circumstances and business realities for many automobile manufacturers are significantly different from what they were when Congress adopted the CO waiver provision.[46] Under these circumstances, I find it unlikely that Congress intended me to deny applications where the benefits to the public of a waiver grant would outweigh the benefits of a waiver denial.[47] I believe the language of section 202(b)(5)(A) gives me the flexibility to provide the relief granted here.

2. *Other Waiver Applications Granted: Chrysler's 5.2L/2V Engine Family.*

In my fourth CO waiver decision published on March 19, 1980,[48] I granted Chrysler a waiver for its 5.2L/2V engine family for the 1981 model year. I granted the waiver because newly-available information indicated that Chrysler and the public risked incurring severe adverse economic repercussions if I were to make an incorrect projection regarding availability of technology to enable this Chrysler engine family to meet the 3.4 gpm CO standard. I concluded that these risks were the type which the *International Harvester* decision directed EPA's Administrator to consider in ruling on requests for statutorily-authorized delays in implementing emission standards.

Specifically, the new information indicated that because of Chrysler's relatively instable financial situation, incorrectly denying a waiver for this Chrysler engine family was likely to cause severe adverse economic repercussions to Chrysler and the public generally.

Moreover, the new information further indicated that this engine family faced potential driveability problems which Chrysler might have been unable to resolve in time for the 1981 model year. Given Chrysler's limited flexibility in applying alternative technology, driveability problems might have prevented Chrysler from producing these engine families under a 3.4 gpm CO standard in the 1981 model year in a manner that would be acceptable to consumers.

Thus, I further concluded there was then some potential that a determination that effective control technology, considering costs, driveability, and fuel economy, would be available to any of these three engine families for the 1981 model year might prove to be incorrect.

I determined at that time that the risks arising from the possibility of incorrect denial for the 1982 model year would diminish considerably because Chrysler would have additional time to deal with driveability problems it would be facing in the 1981 model year. I therefore denied Chrysler's request for a waiver for this engine family for the 1982 model year, on the basis that Chrysler had not adequately established that effective control technology, considering costs, driveability, and fuel economy, would not be available for this engine family for the 1982 model year.

Chrysler now argues that the possibility of an erroneous denial that existed when I issued my last Chrysler waiver decision in March, 1980, still exists today.[49] Chrysler states that its emissions control capabilities for model year 1982 are generally no greater than they were in 1981.[50] Specifically, for its 5.2L/2V engine family, Chrysler is utilizing the same emissions control system that it used on model year 1981 except for three minor improvements, two of which are primarily intended for better cold driveability.[51]

Chrysler contends that with this technology there is a risk that the 5.2L/2V engine family will not be able to meet a 3.4 gpm standard when driveability and fuel economy are considered.[52] Chrysler cites its 1981 model year first quarter "Federal Emissions Surveillance Data" and reports that for this engine family the deteriorated CO value averaged over 29 tests is 3.29 gpm.[53] Chrysler contends that this value is so close to the 3.4 gpm CO standard that this engine family does not have "adequate margins" of safety relative to a 3.4 gpm standard if, in fact, that were the standard this engine family were required to meet.[54]

a. *Likelihood of Erroneously Determining That Effective Control Technology Is Available*

As I stated earlier,[55] the *International Harvester* decision indicated that the costs of an erroneous denial which the Administrator should consider should include the costs from a denial which is only partially accurate. There is a small potential that my decision would be partially erroneous were I to deny Chrysler's waiver request for this engine family based on a determination that technology is available for it to achieve a 3.4 gpm standard considering costs, driveability, and fuel economy.

The risks that Chrysler faces in marketing this engine family in model year 1982 have diminished somewhat from March, 1980, when I last considered a waiver request for this engine family. Despite the fact that I had granted this engine family a waiver to 7.0 gpm CO, its 1981 model year certification vehicles achieved levels below the statutory standard with technology substantially similar to that which Chrysler plans to use on these vehicles for model year 1982.[56] The three certification emission data vehicles exhibit CO emissions that averaged 1.9 gpm (taking into account likely deterioration in emissions performance over extended mileage), with a range of 1.4 to 2.9 gpm.[57]

These test results indicate that effective control technology most likely is available to enable this engine family to certify to the 3.4 gpm CO standard. Moreover, Chrysler has not reaised any new facts or evidence establishing that, strictly on the basis of emission control capabilities, this engine family will not be able to comply with other emission-related requirements should I deny it a waiver for the 1982 model year.[58]

---

[46] The Court in *International Harvester* adopted a similar approach in interpreting Congress' intent:

> The Court must seek to discern and reconstruct what the legislature that enacted the statute would have contemplated for the court's action if it could have been able to foresee the precise situation. It is in this perspective that we have not flinched from our discussion of the economic and ecological risks inherent in a "wrong decision" by the Administrator.

478 F. 2d 615, 648, citing *Montana Power Co.* v. *FPC*, 445 F. 2d 739, 746 (enbanc, 1970), cert. denied, 400 U.S. 1013 (1971).

[47] The flexibility which Congress explicitly afforded me through the waiver provision (which is similar to its legislative predecessor, the suspension provision) in implementing the 3.4 gpm CO standard, gives me a unique opportunity to accommodate these concerns which waiver applicants have raised here. See, e.g. the legislative history for the suspension provision in the 1970 act: 116 Cong. Rec. 33120, (Senator Baker); 33081 (Senator Griffin); 32905 (Senator Muskie) (1970).

[48] 45 FR 17914.

[49] Oct. 24, 1980 Transcript, p. 10. C. Nov. 4, 1980 supp. submission, p. 1.

[50] Oct. 24, 1980 Transcript, p. 11.

[51] Oct. 24, 1980 Transcript, pp. 29, 44, 69, 72. Chrysler stated it will use improved electronics for greater spark and fuel control, and a different location for its oxygen sensor to improve cold driveability for this engine family. This engine family will also be equipped with catalyst seals for better CO emissions control. Chrysler did not submit any driveability data for vehicles equipped with these improvements.

[52] Chrysler App., p. II–7.

[53] C. Oct. 17, 1980 supp. submission, Attachment E.

[54] Oct. 24, 1980 Transcript, p. 18, 109.

[55] See discussion accompanying footnote 37 of this decision, supra

[56] Oct. 24, 1980 Transcript, p. 67. Chrysler plans to apply for "carryover" certification for this engine family in 1982. Oct. 24, 1980 Transcript, p. 69.

[57] C. Oct. 17, 1980 supp. submission, Attachment A. Oct. 24, 1980 Transcript, p. 110. Certification emission data vehicles are tested at low mileage to determine compliance with emission requirements. See 40 CFR § 86.079–26 (1979).

[58] Assembly-line emission test results which Chrysler submitted as representative of its 5.2L/2V vehicles manufactured during the first production quarter of the 1981 model year exhibited a 17% (5 of 29) failure rate with respect to the statuory CO emission standard. See Chrysler's Federal Passenger Individual Vehicle C.V.S. Test Data Audit Report. On the basis of this failure rate, the

Footnotes continued on next page

Section 202(b)(5)(C)(iii) of the Act, however, requires that I also consider costs, driveability, and fuel economy before reaching my ultimate determination on availability of effective control technology to meet a 3.4 gpm CO standard.

In my decision granting Chrysler's waiver request for this and other engine families for model year 1981, I determined that some potential existed that Chrysler would not be able to produce vehicles in these engine families with both acceptable eminssions and marketable driveability.[59] I also determined that waiving the 3.4 gpm CO standard would permit Chrysler to develop calibrations for these engine families resulting in better driveability.[60] The driveability risks that were present during my consideration of that waiver request are no longer as significant with respect to this engine family for the 1982 model year, but the potential for driveability difficulties continues to exist.

Chrysler contends that because of the risk of driveability difficulties it needs a waiver for this engine family to maintain driveability at a competitive level.[61] Chrysler explains that its driveability targets for both cold and warm modes for this engine family is 7.0, on a scale of 10,[62] and that its 1981 certification data vehicles and 1981 first quarter production vehicles had driveability ratings of 6.4 for the cold mode and 7.1 for the warm mode.[63]

Chrysler states that when the driveability ratings of its development vehicles average 6.0, the actual ratings in production can range from 4 to 8.[64] While admitting that this much variance is unusual, Chrysler indicated that a one number range in driveability ratings on either side of the average driveability value was more representative of actual production experience.[65] Thus, this engine family, with an average cold driveability rating of 6.4, could experience actual production ratings as low as 5.4, which Chrysler describes as "marginal" and could result in decreased sales due to customer dissatisfaction.

To improve cold driveability, Chrysler has employed several relatively minor changes in hardware and calibration which Chrysler states will slightly increase CO emission.[66] Given the fact that Chrysler's 1981 first quarter surveillance data indicate that average CO emissions for this engine family is 3.29 gpm. Chrysler may not be able to implement its driveability improvement changes while remaining in compliance with a 3.4 gpm standard. Chrysler states that a CO waiver would provide it with the flexibility it needs to optimize driveability by implementing these and other possible changes.[67]

Chrysler also states that improving driveability by taking advantage of a CO waiver would enable it to save the costs associated with warranty claims arising from "carburetion/driveability" difficulties.[68] Information submitted by Chrysler comparing "Projected Lifetime Carburetion/Driveability Expense Per Unit Sold" for its 5.2L/2V engine family indicated that the 5.2L/2V family had expenses approximately one third as high as a larger engine family which exhibited lower driveability ratings.[69] Thus, a waiver would enable Chrysler to reduce its warranty costs associated with driveability difficulties.

Driveability considerations, therefore, although diminished from the time of my last waiver consideration for this engine family, still present some potential for an erroneous decision, were I to determine that effective control technology exists for this engine family to meet a 3.4 gpm CO standard.

With regard to costs of the technology needed to meet the 3.4 gpm CO standard, Chrysler stated generally that waivers would allow it to use its resources to, among other things, keep the cost of its products at a competitive level.[70] Chrysler did not provide information indicating that cost savings, if any, resulting from my decision to grant a waiver would be significant.[71]

With regard to fuel economy, Chrysler states that it expects a fuel economy benefit of approximately 2% when comparing vehicles receiving waivers to 7.0 gpm with those not receiving waivers.[72] Chrysler admitted, however, that this was simply a judgment applicable to several engine families in the aggregate, rather than specifically to its 5.2L/2V engine family.[73]

b. *Potential Adverse Economic Consequences of Erroneously Determining That Effective Control Technology Is Available*

While this potential for an erroneous decision alone would normally not give rise to sufficient concern to serve as a basis for concluding that effective control technology is not available, I must assess this risk in light of the severity of the adverse consequences which could occur if the decision indeed turned out to be erroneous. Thus, I have considered information provided by Chrysler and other information in the public record in determining possible risks to Chrysler and the public in denying a waiver for the 5.2L/2V engine family.

The general economic difficulties of the automobile industry, and Chrysler's unique position in the decline are well documented.[74] While the other automobile manufacturers are also experiencing economic difficulties, Chrysler remains the only corporation to have received a federal aid package including $1.5 billion in loan guarantees. Even with this aid, Chrysler describes its economic outlook as still highly uncertain.[75]

Specifically, although recent projections indicated Chrysler might have a profitable fourth quarter, Chrysler now projects that it will experience a fourth quarter loss.[76] One reason for this reversal is that sales of

---

Footnotes continued from last page
probability of production vehicles failing a Selective Enforcement Audit (SEA) is quite limited. See 41 FR 31474 (July 28, 1976).

Chrysler argues that it is unable to achieve compliance simultaneously with a 3.4 gpm CO standard and the high altitude regulations, applicable in the 1982 model Year. Chrysler App., 1–3 and Oct. 24, 1980 Transcript, p. 88. Chrysler indicated, however, that the data on hand supporting this position was limited, that it was unsure of exactly how much difficulty high altitude regulations would present, and that the available data did not include test results of vehicles with improved electronic memory devices that Chrysler hopes will improve high altitude CO emissions control. See Oct. 24, 1980 Transcript, pp. 89–91.

[59] 45 FR 17919 (Mar. 19, 1980). I pointed out explicitly that this risk alone was not significant enough for me to grant those waivers, but that I could grant those waivers for model year 1981 only because Chrysler established both that severe adverse economic consequences could result if those driveability concerns indeed turned out to preclude the engine families in question from being able to meet the 3.4 gpm CO standards.

[60] Id.

[61] Chrysler App. p. II–12.

[62] Oct. 24, 1980 Transcript, p. 25. Chrysler also states that when a vehicle rates below 5.5, on a development or individual evaluation basis, it reviews the circumstances surrounding the vehicles in question to determine whether to continue production.

[63] Nov. 4, 1980 supp. submission, p. 12; Oct. 24, 1980 Transcript, p. 67.

[64] Oct. 24, 1980 transcript, p. 50.

[65] Id.

[66] Oct. 24, 1980 Transcript, p. 13.

[67] Oct. 24, 1980 Transcript, pp. 13–14, 15.

[68] Oct. 24, 1980 Transcript, p. 51.

[69] The projected expenses for the 5.2L/2V engine family were $5.53, while the expenses for the larger engine family were $14.44. C. Nov. 4, 1980 supp. submission, p. 3.

[70] Oct. 24, 1980 Transcript, p. 16.

[71] Chrysler stated that it was not running parallel 3.4 gpm and 7.0 gpm programs with different emission control designs and different costs. Oct. 24, 1980 Transcript, pp. 46, 48, 49, 72.

[72] Oct. 24, 1980 Transcript, p. 58.

[73] Id. Chrysler did not submit data substantiating its 2% figure.

[74] See e.g., my discussion of Chrysler's economic position in my Mar. 19, 1980 waiver decision, 45 FR 17917, and my discussion accompanying footnotes 30–32 of this decision.

[75] C. Nov. 4, 1980 supp. submission, p. 4. New York Times, Dec. 18, 1980, "Chrysler Expects $1.7 Billion Loss; Seeks Another $400 Million in Aid," Section A, p. 1.

[76] Id.

Chrysler's K–cars, upon which it publicly hinged its economic well being, have stalled recently, forcing Chrysler to stop production of its K–cars 7 working days earlier than its scheduled annual holiday close down and forcing the layoff of 10,000 workers.[77]

Moreover, the slump has caused a cash flow crisis which has forced Chrysler to adopt severe emergency measures. Chrysler will reportedly request $400 million in additional loan guarantees from the Federal Government, after having already drawn $800 million in authorized guarantees.[78] Chrysler has also requested its suppliers to freeze their prices, and has informed certain of its buyers that it will postpone paying its bills to ease its cash flow crisis.[79] Finally, Chrysler has asked the United Auto Workers to freeze its wage and fringe benefits package in order to realize a savings of $1.5 billion.[80]

Chrysler states that it cannot afford to lose the sales of an entire engine family.[81] Furthermore, Chrysler is already capacity limited with respect to its 5.2L/EFM engine family. Thus, the only available substitute were Chrysler unable to market this engine due to waiver denial is the 5.2L/4V, an engine family that Chrysler states has lower fuel economy and driveability ratings than the 5.2L/2V.[82]

I have determined that the lost sales and other economic consequences that may result from a partially inaccurate decision regarding availability of technology would only exacerbate Chrysler's serious economic situation. An incorrect waiver denial could set in motion a series of events which might affect Chrysler's viability as a manufacturer. If Chrysler's viability is ultimately threatened, even greater adverse impacts on employment, Chrysler's suppliers, and the national economy could result.

c. *Balancing the Risks of Erroneous or Partially Accurate Denial Against the Benefits of a Correct Denial*

The *International Harvester* decision requires that I balance the risk of adverse consequences posed by an erroneous waiver denial against the potential benefits lost by an erroneous grant.

The adverse effect on air quality from granting a waiver for Chrylser's 5.2L/2V engine family model is insignificant. Chrysler's projected 1982 sales for this model account for less than one percent of total 1982 U.S. automobile sales. In addition, the air quality effect of granting waivers to other engine families, if any, which may incur adverse risks and potential benefits comparable to those of the Chrysler 5.2L/2V engine family from a waiver denial also are quite likely to be insignificant.[83]

The driveability concerns expressed by Chrysler present the possibility that Chrysler would not be able to produce this engine family with both acceptable emissions and marketable driveability. This possibility alone does not provide a basis of my determining that Chrysler has established that effective control technology is not available, considering costs, driveability and fuel economy. Available information also indicates, however, that severe economic costs could arise as a result of an erroneous determination for Chrysler's 5.2L/2V engine family on the availability of technology criterion. The presence of both of these factors relative to the limited environmental benefits which a waiver denial under these circumstances would achieve compels me to determine that Chrysler has met its burden in establishing that effective technology is not adequately available for its 5.2L/2V engine family for the 1982 model year, considering costs, driveability, and fuel economy.

B. Protection of Public Health

Section 202(b)(5)(C) of the Act requires that before I grant a waiver covering a given engine family, I must find that protection of the public health does not require attainment of a 3.4 gpm CO standard by the vehicles of the engine family receiving the waiver. I have already examined this issue with respect to the relative consequences and risks involved in granting or denying the waiver requests for fuel efficient engine families and for the Chrysler 5.2L/2V engine family at issue here.

I have found as a result of this examination that any adverse health effects resulting from waiving the 3.4 gpm standard for the 1982 model year engine families discussed in this consolidated decision would be insignificant. The same statement is true regarding the combined health effects resulting from emissions from engine families receiving waivers under the previous consolidated CO waiver decisions. As a result, protection of the public health does not require attainment of the 3.4 gpm CO standard by the engine families here, for which I have determined that effective control technology is not available for the 1981 model year.[84]

While waiving the 1982 statutory CO standards for these engine families arguably would not significantly affect public health,[85] noticeable increases in ambient CO levels could result from granting waivers industrywide. In light of the fact that industrywide waivers would not be protective of the public health, it is reasonable to grant waivers covering only that portion of the industry consisting of engine families for when I have determined that effective control technology, considering costs, driveability, and fuel economy, is not available and which I have determined are essential to the public interest (presuming these families also meet the remaining statutory criteria).[86]

The National Automobile Dealers Association (NADA) submitted comments to the public docket claiming that EPA should grant all pending and future 1982 waiver requests on a manufacturer-by-manufacturer basis from the 3.4 gpm CO standard and cited as support for that position the June 30, 1980 National Academy of Sciences Report.[87] That NAS report concludes that the technology exists to meet the Congressionally-mandated 3.4 gpm CO standard. However, the study also

[77] Wall Street Journal, Dec. 10, 1980, "Chrysler To Cut K–Car Production Due to Poor Sales."

[78] See footnote 75, supra.

[79] Wall Street Journal, Dec. 8, 1980 "Chrysler Delays Paying Some Of Its Bills As Car Sales Slump Threatens Recovery."

[80] New York Times, Dec. 5, 1980, "Chrysler Drops '80 Profit Hope."

[81] Oct. 24, 1980 Transcript, p. 14.

[82] Oct. 24, 1980 Transcript, p. 107.

[83] I need not determine at this time whether continuing to grant waivers covering any further engine families which have a comparable balance between adverse risks and potential benefits associated with them would or would not eventually result in a significant impact on air quality. Granting a waiver for this Chrysler model would increase the coverage of waivers granted to approximately 30% of all scheduled 1982 U.S. automobile sales.

[84] See, e.g., my discussion of ambient air quality effects in my first consolidated CO waiver decision. App. B. 44 FR 53376, 53402, 53407 (September 13, 1979) and 44 FR 69416, 69146, 69458–69462 (Dec. 3, 1979). The engine families receiving waivers under my previous CO waiver decisions constitute less than 13% of the total projected 1982 model year light duty vehicle sales in the United States. 44 FR 69416, 69424, note 58 (Dec. 3, 1980). These manufacturer projected sales of about 1.4 million units of these models in the 1982 model year. See note 42, *supra*.

[85] For further discussion concerning this issue see the first decision, 44 FR 53376, 53381 and Appendix B at 44 FR 53402–53407 (Sept. 13, 1979).

[86] I discussed the ambient air quality effect of granting CO waivers in each Appendix B in two previous decisions, 44 FR 53376, 53402–53407 (Sept. 13, 1979) and 44 FR 69416, 69456–69462 (Dec. 3, 1979).

[87] National Automobile Dealers Association Comments on Motor Vehicle Pollution Control Waiver of Carbon Monoxide Standards, Public Docket EN–80–16, Oct. 24, 1980, p. 2. See also my statement regarding similar comments by NADA in my tenth CO waiver decision, 45 FR 67753, 67756 (Oct. 14, 1980).

recommended that the need for the 3.4 gpm standard be re-evaluated.[88]

NADA claims that a 7.0 gpm CO standard is adequate to protect public health, and it relies on the NAS June 30, 1980 recommendation to re-evaluate the statutory 3.4 gpm CO standard as support for this contention.[89] GM also contends that the 3.4 gpm CO emission standard is unnecessary to protect air quality and public health, and that this standard is not cost-effective compared to the cost benefits of other pollution control strategies.[90]

I have discussed in previous decisions the results of the air quality analysis which indicate that noticeable increases in ambient CO levels could result from a two-year, industry-wide waiver.[91] In further response to NADA's assertion that an industry-wide waiver would not adversely affect public health, I refer to Congress' intent in including the waiver provision in the Act. Congress specifically substituted the requirement that the Administrator make individual waiver determinations for each vehicle model at issue for the authority previously delegated in the 1970 version of the Act to consider suspension of CO emission standards on a manufacturer-by-manufacturer basis. In so doing, Congress made clear that it wanted the Administrator to relax the statutory 90 percent reduction requirement for CO only when appropriate and as narrowly and precisely as possible.

Indeed, discussions in Congress concerning the Act's current CO waiver provision include the explicit statement that "[t]he waiver is not a general waiver for all manufacturers, nor is it a general waiver for all models of vehicles produced by a single manufacturer." [92] Instead, the wavier provision is to be available for a manufacturer's particular model line which cannot meet the 3.4 gpm standard in the 1981 or 1982 model years.[93] Granting an industry-wide waiver, or a waiver covering all future waiver requests on a manufacturer-by-manufacturer basis as suggested by NADA, would conflict with this clear evidence of Congressional intent with respect to the application of the waiver provision.

Section 202(b)(1)(A) of the Act mandates that the CO emissions standards for light-duty vehicles manufactured during or after the 1981 model year be at least a 90 percent reduction from emissions of CO allowable in the 1970 model year; namely, 3.4 grams per mile. Congress established that standard (in conjunction with the other statutory emission standards and statutory requirements) at the level which it determined would best address public health concerns, given the number of regions which need to reduce ambient CO to levels which are protective of public health. Congress did not intend that I relax the requirement for attaining the statutory emission levels it prescribed if these levels were reasonably achievable. Congress established this comprehensive legislative scheme to achieve nationwide air quality goals, realizing that some air pollution control methods might be more cost-effective than others, but acting on the conclusion that comprehensive employment of all of the statutory control methods which it specified was necessary to meet these air quality goals.[94]

C. Good Faith

In order for me to grant a waiver to any applicant, section 202(b)(5)(C)(ii) of the Act requires that I determine that the applicant in question has made all good faith efforts to meet the established emission standards. As a result, I have examined information regarding these applicants' previous and projected efforts toward meeting a 3.4 gpm CO emission standard for the engine families in question.

Each of the applicants has provided engineering, financial and technical information to support the contention that it has acted in good faith in trying to meet the 3.4 gpm CO standard. In general, information in the record provides support for determining that each has made good faith efforts in developing emission control technology to meet the 3.4 gpm CO standard.

As I mentioned earlier, these applicants generally have already made significant progress in developing the technological capabilities ot these engine families to meet the 3.4 gpm CO emission standard.[95] Evidence of such improved CO emissions control capabilities [96] substantiate these applicant's claims that they have exercised good faith efforts toward meeting the statutory standard and are therefore not benefiting from a potentially inequitable competitive advantage they might achieve by avoiding the good faith effort requirement of the Act and being unjustifiably granted a waiver.[97]

In the absence of any evidence supporting a contrary conclusion, I am unable to determine other than that these applicants have met the good faith criterion with respect to the engine families under consideration in this decision.

IV. Conclusion and Interim Standards

Each of the seven engine families which were the subject of this decision are covered by waiver applications which meet the requirements for receiving a waiver under section 202(b)(5)(C) of the Act. As a result, I am granting a waiver of the effective date of the statutory CO emission standard for the Ford 1.6L, GM 1.8/2.0L, AMC 151 CID, and Chrysler 1.6L, 2.2L, 2.6L, and 5.2L/2V engine families for the 1982 model year.

As required by section 202(b)(5)(A) of the Act, I am simultaneously promulgating regulations prescribing an interim CO emission standard for 1982 model year vehicles of 7.0 gpm for the engine families receiving a waiver. For these engine families, this action continues in effect for the 1982 model year the CO emission standard applicable to all 1980 model year light-duty vehicles.

Dated: December 23, 1980.

Douglas M. Costle,

Administrator.

[FR Doc. 81-262 Filed 1-5-81; 8:45 am]

BILLING CODE 6560-33-M

[88] Report by the Committee on Motor Vehicle Emissions by the National Research Council of the National Academy of Sciences, June 30, 1980, pp. 15–16.

[89] Id.

[90] GM also contended that the cost of technology designed to meet the 3.4 gpm CO emission standard was unreasonable because it was not cost-effective when compared to other pollution control strategies. Oct 10, 1980 Transcript, pp. 10–11. GM's contentions regarding cost effectiveness do not support the position that the costs associated with technology needed to meet the 3.4 gpm CO standard are so great, by themselves, as to preclude all manufacturers from competitively marketing their engine families under a 3.4 gpm CO standard. I rejected a similar cost effectiveness claim by GM in my first consolidated decision. 44 FR 53376, 53385 (Sept. 13, 1979).

[91] 45 FR 67753 (Oct. 14, 1980).

[92] 123 Cong. Rec. S13703 (daily ed. Aug. 4, 1977) (remarks by Sen. Muskie).

[93] Id. at S13702–13703.

[94] See my first consolidated CO waiver decision at 44 FR 53387 (Sept. 13, 1979) (also addressing how the Act directs me to consider the issue of potential added costs relative to air quality benefits from waiver denial). See also, e.g., Comm. on Public Works, National Air Quality Standards Act of 1970, S. Rep. No. 1196, 91st Cong., 2nd Sess. 23, 24, 101 (1970); 116 Cong. Rec. 32904 (1970) (Sen. Muskie).

[95] See section IIIB(1).

[96] See e.g., note 43, *supra.*

[97] *International Harvester, supra,* 478 F. 2d 615, 637, 638 (D.C. Cir., 1973).

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 86

[EN-FRL 1719-5]

Revised Motor Vehicle Exhaust Emission Standards for Oxides of Nitrogen (NO_x) for 1981 and 1982 Model Year Light-Duty Diesel Vehicles

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: This regulation establishes oxides of nitrogen (NO_x) emission standards for 1981 and 1982 model year light-duty vehicles belonging to the diesel engine family for which I have granted a waiver from the standard otherwise applicable under section 202(b)(6)(B) of the Clean Air Act, 42 U.S.C. 7521(b)(6)(B).

EFFECTIVE DATE: February 5, 1981.

ADDRESSES: Information relevant to this rule is contained in Public Docket EN-80-15 at the Central Docket Section of the Environmental Protection Agency (EPA), Gallery I, 401 M Street SW., Washington, D.C. 20460 and is available for review between the hours of 8:00 a.m. and 4:00 p.m. As provided in 40 CFR Part 2, EPA may charge a reasonable fee for copying services.

FOR FURTHER INFORMATION CONTACT: Jerry Schwartz, Manufacturers Operations Division (EN-340), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460, (202) 472-9421.

SUPPLEMENTARY INFORMATION: Section 202(b)(1)(B) of the Clean Air Act (Act), 42 U.S.C. 7521(b)(1)(B), requires that regulations applicable to NO_x emissions from light-duty vehicles or engines manufactured during or after the 1981 model year shall contain standards which provide that such emissions from vehicles or engines shall not exceed 1.0 gram per vehicle mile. Regulations implementing this requirement have established this NO_x standard.

Section 202(b)(6)(B) of the Act authorizes the Administrator, upon application by any manufacturer, to waive the statutory NO_x standard for the 1981 through 1984 model years for any light-duty diesel engine family for which the Administrator can make the required statutory findings. I must promulgate interim NO_x standards applicable to the subject light-duty diesel engine families for those model years for which I have granted waivers.

Nissan Motor Company, Ltd. has submitted an application for a waiver for one of its diesel engine families. The statutory criteria, my determinations with respect to the vehicle model covered by the waiver application, and my decision to grant or deny the waiver application appear in the decision published along with this notice. In that decision, I granted waivers covering the following engine families for 1981 and 1982 model years only:

Manufacturer, engine family and Model year
Nissan: 2.9 Liter—1981, 1982

Having decided to grant the waiver application for this diesel engine family, I am simultaneously promulgating regulations adopting emission standards not permitting NO_x emissions from 1981 and 1982 model year vehicles of this engine family to exceed 1.5 gpm. The public has received an opportunity to comment on the waiver application at issue, and I have considered those comments in making the decision which requires the promulgation of this rule. Also, the 1981 model year certification process is underway. For these reasons, I find that providing notice and an opportunity to comment on this rulemaking before final promulgation is impracticable and unnecessary.

Note.—The Environmental Protection Agency has determined that this action does not constitute a major proposal requiring preparation of a Regulatory Analysis under Executive Order 12044.

In addition, because the decision accompanying this rulemaking is based on a detailed analysis indicating that this rulemaking will have a negligible effect on air quality, the Environmental Protection Agency has not prepared an Environmental Impact Statement to accompany this rulemaking.

Dated: December 23, 1980.

Douglas M. Costle,
Administrator.

40 CFR Part 86 is amended as follows:

Subpart A—General Provisions for Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles, 1977 and Later Model Year New Light-Duty Trucks and 1977 and Later Model Year New Heavy-Duty Engines

1. 40 CFR 86.081-8(a)(1)(iii) is revised to read as follows:

§ 86.081-8 Emissions standards for 1981 model year light-duty vehicles.

(a) * * *
(1) * * *

(iii) Oxides of nitrogen—1.0 grams per vehicle mile, except that: (A) oxides of nitrogen emissions from 1981 model year light-duty vehicles manufactured by American Motors Corporation shall not exceed 2.0 grams per vehicle mile; (B) oxides of nitrogen emissions from light-duty diesel vehicles of the following 1981 model year engine families shall not exceed the prescribed levels:

Manufacturer	Engine family	NO_x (gpm)
General Motors Corp	5.7 liter (L)	1.5
Daimler-Benz AG	2.4L	1.5
	3.0L naturally aspirated (NA).	1.5
	3.0L turbocharged (TC).	1.5
AB Volvo	2.4L NA	1.5
Peugeot	2.3L-TC-XD2S	1.5
Volkswagen AG	1.6L-NA-2250 pounds inertia weight (I.W.).	1.3
	1.6L-NA-2500 I.W.	1.4
	2.0L-NA-3000 I.W.	1.5
Nissan Motor Co	2.8L	1.5

* * * * *

2. 40 CFR 86.082-8(a)(1)(iii) is revised to read as follows:

§ 86.082-8 Emissions standards for 1982 model year light-duty vehicles.

(a) * * *
(1) * * *

(iii) Oxides of nitrogen—1.0 grams per vehicle mile, except that: (A) oxides of nitrogen emissions from 1982 model year light-duty vehicles manufactured by American Motors Corporation shall not exceed 2.0 grams per vehicle mile; (B) oxides of nitrogen emissions from light-duty diesel vehicles of the following 1982 model year engine families shall not exceed the prescribed levels:

Manufacturer	Engine family	NO_x (gpm)
General Motors Corp	5.7 liter (L)	1.5
Daimler-Benz AG	2.4L	1.25
	3.0L naturally aspirated (NA).	1.5
	3.0L turbocharged (TC).	1.5
AB Volvo	2.4L NA	1.5
Peugeot	2.3L-TC-XD2S	1.5
Volkswagen AG	1.6L-NA-2250 pounds inertia weight (I.W.).	1.3
	2.0L-NA-3000 I.W.	1.5
	1.6L-TC-2250 I.W.	1.3
	1.6L-TC-2500 I.W.	1.4
	2.0L-TC-3000 I.W.	1.5
Nissan Motor Co	2.8L	1.5

* * * * *

(Secs. 202 and 301(a) of the Clean Air Act, as amended, 42 U.S.C. 7521, 7601(a) (Supp. I 1977))

[FR Doc. 81-283 Filed 1-5-81; 8:45 am]

BILLING CODE 6560-30-M

ENVIRONMENTAL PROTECTION AGENCY

[EN-FRL 1719-5a]

Application for Waiver of the 1981-1982 Model Year Oxides of Nitrogen Emission Standard for Light-Duty Diesel Motor Vehicles—Fourth Decision of the Administrator

I. Introduction

This is the fourth decision I have issued under section 202(b)(6)(B) of the Clean Air Act, as amended (Act) [1] regarding applications from automobile manufacturers for waiver of the 1.0 gram per mile (gpm) oxides of nitrogen (NO_x) emission standard scheduled to apply to 1981 and subsequent model year light-duty diesel vehicles and engines.[2]

As the introductions to the first three diesel NO_x waiver decisions explain, section 202(b)(1)(B) of the Act establishes the standards applicable to NO_x emissions from light-duty vehicles and engines manufactured during and after model year 1977.[3] This section requires the Administrator of the Environmental Protection Agency (EPA) to promulgate regulations containing standards which provide that NO_x emissions may not exceed 2.0 gpm for model years 1977 through 1980, and may not exceed 1.0 gpm for 1981 and later model years.

Section 202(b)(6)(B) of the Act provides that, upon the petition of a manufacturer, the Administrator may waive the 1.0 gpm NO_x standard to a level not to exceed 1.5 gpm, for any class or category of diesel-powered light-duty vehicles and engines manufactured during the four model year period beginning with model year 1981. In order to obtain a waiver, the manufacturer must show that the waiver is necessary to permit use of diesel engine technology in the class or category of vehicles or engines for which it has requested a waiver. Moreover, the Administrator must determine:

(i) That such waiver will not endanger public health,

(ii) That such waiver will result in significant fuel savings at least equal to the fuel economy standard applicable in each year under the energy Policy and Conservation Act (EPCA), and

(iii) That the technology has a potential for long-term air quality benefit and has the potential to meet or exceed the average fuel economy standard applicable under EPCA at the expiration of the waiver.[4]

On August 29, 1980, I received an application from Nissan Motor Company, Ltd. (Nissan) for waiver of the 1981 and 1982 1.0 gpm NO_x standard for its 2.8 liter (L) diesel engine family. EPA held a public hearing to consider this application on September 19, 1980. The transcript of this hearing, the materials submitted by the applicant in its waiver request, and all other information upon which I have based my decision on this waiver request, including the technical appendix cited below, are included in EPA Public Docket EN-80-15.[5]

II. Summary of Decision

A. Waiver Application Granted

The application which I have decided to grant covers the following engine family for the model years specified:

Waiver Applications Granted

Manufacturer	Model year	Engine family
Nissan	1981, 1982	2.8L

As discussed more fully below, I have concluded that Nissan's application covering this engine family meets each of the statutory criteria for receiving a waiver for the years noted. I am prescribing an interim NO_x standard of 1.5 gpm for Nissan's 2.8L engine family for model years 1981 and 1982.

III. Discussion

A. Assessing Need for Waivers

Section 202(b)(6)(B) of the Act expressly assigns to an applicant the burden of showing that the waiver is necessary to permit the use of diesel engine technology in a particular class or category of vehicles or engines. The major issue I must address under this criterion is whether the applicant has shown that unless I grant the waiver, the engine family which the waiver request covers will not be able to meet applicable emission standards, even with the addition of any device, equipment or aspect of diesel engine technology presently available or expected to become available during the period covered by the waiver request.[6]

1. *Decision Methodology*

The methodology this decision employs to assess an engine family's need for a waiver is the same as the methodology I used in my first three diesel NO_x waiver decisions.[7] This methodology includes an evaluation of the effect of NO_x emission controls on emissions of particulate matter. This evaluation relies on information supplied by Nissan in this proceeding, and by parties commenting in the diesel particulate rulemaking proceedings,[8] as well as on other information contained in the record for this decision.

2. *Nissan's Application*

Nissan has reached a stage in its development of NO_x emission controls at which it has narrowed the range of strategies it contemplates employing to meet the applicable emission standards[9] to, at most, a few alternative systems. To support its contention that a waiver is necessary to permit the use of diesel technology for its 2.8L engine family, Nissan has provided descriptions of the systems it has been considering in efforts to meet 1981 and later model year emission standards.

Nissan has concentrated its development efforts on the following two NO_x emission control techniques: engine modification, and exhaust gas recirculation (EGR). Nissan asserted that engine modifications resulted in a tradeoff between NO_x and HC that made simultaneous attainment of the statutory HC and NO_x standards impossible.[10] Nissan also stated that this tradeoff is most pronounced when NO_x is lowered to 1.5 gpm and below; thus, Nissan asserted it was impossible

---

[1] 42 U.S.C. 7521(b)(6)(B) (Supp. I 1977).

[2] The first consolidated decision was published at 44 FR 5480 (Jan. 23, 1980) (hereinafter "Orig. decision"). The second consolidated decision was published at 45 FR 34718 (May 22, 1980) (hereinafter "Second decision"). The third decision was published at 45 FR 64590 (Oct. 2, 1980) (hereinafter "Third decision").

[3] 42 U.S.C. 7521(b)(1)(B) (Supp. 1 1977). See the first diesel NO_x waiver decision for a discussion of the statutory history leading to this provision. Orig. decision at 5480, n.1.

[4] For a discussion of the Congressional purpose behind this provision, see the discussion accompanying notes 2 and 3 of my original decision at 5480. EPA published guidelines for the submission of applications under this waiver provision at 43 FR 30341 (July 14, 1978) (hereinafter "Guidelines").

[5] EPA Public Docket EN-80-15 can be found in EPA's Central Docket Section, Gallery I, 401 M St., S.W., Washington, D.C. 20460. Copies of materials in the docket, including the technical appendix, may be obtained by writing to this address at Mail Code (A-130).

[6] Guidelines, at 30342. Beginning with the 1981 model year, applicable statutory standards are 0.41 gpm hydrocarbons (HC), 3.4 gpm carbon monoxide (CO), and 1.0 gpm NO_x. Beginning in the 1982 model year, the light-duty diesel vehicle particulate standard of 0.6 gpm takes effect. That standard becomes 0.2 gpm as of the 1985 model year. 45 FR 14496 (March 5, 1980).

[7] For a more complete discussion of the methodology employed, see Orig. decision at 5484-5485.

[8] EPA Public Docket No. OMSAPC-78-3.

[9] See footnote 6.

[10] Nissan Motor Co., Ltd. Application for Waiver of the 1981 and 1982 NO_x Emission Standard for Light-Duty Diesel Engines, dated August 29, 1980 (hereinafter "Nissan App.") 1-2; transcript of September 19, 1980 Public Hearing on Waiver of 1981 NO_x Emission Standards (hereinafter "Tr") 12. Engine modifications that Nissan has researched include changes in prechamber configuration, combustion chamber insulation and changes in fuel injection systems specifications. Nissan App. II-2.

to meet even a 1.5 gpm NO_x standard while meeting other applicable standards with engine modifications.[11] Nissan also noted that certain engine modifications adversely affected vehicle operation characteristics, such as increased smoke emissions and cold startability difficulties.[12]

As a result of the difficulties Nissan perceived in utilizing engine modifications as its primary method of NO_x control, Nissan stated that it has shifted the emphasis of its efforts to developing EGR systems, which it now considers its primary NO_x control strategy.[13]

Specifically, Nissan began its EGR; system development program with a mechanically controlled intake throttle system.[14] Nissan stated, however, that it encountered the following problems with this system: accelerator pedal that is difficult for the operator to depress, variability in EGR amounts, smoke, engine part wear, engine oil deterioration, and throttle valve deposits resulting from soot.[15] Nissan also asserted that this system was incapable of achieving its design targets for HC, CO and particulates. As a result of these concerns Nissan began development work on an electopneumatic EGR system. This system exhibits advanced electronic sensing capabilities, thereby enabling more precise control of the amount of EGR and engine operation modes where EGR is activated.[16]

Nissan asserts, however, that despite their development efforts, this "prime" EGR system is still encountering the following problems:

(1) NO_x reduction to levels that Nissan considers necessary to certify to a 1.0 gpm standard results in a significant increase in HC and particulate emissions, as well as visible smoke.

(2) the deterioration factors for HC and particulate emissions also increase significantly as NO_x emissions approach 1.0 gpm.

(3) An increase in EGR rate yields unacceptable engine wear. Specifically, when Nissan increases the EGR rate, more soot is produced with mixes with the engine oil, decreasing its lubricating capabilities.[17]

Nissan believes that the only way to avoid these engine durability problems is to employ a lower EGR rate than it is presently using on its development vehicles.[18] With a lower EGR rate, however, Nissan states that it will only be capable of achieving a 1.5 gpm NO_x level, thereby necessitating a waiver to that interim standard.[19]

My technical analysis of the data Nissan submitted shows the 2.8L engine family to be incapable of meeting both the 1.0 NO_x and 0.41 HC standards simultaneously in 1981, even employing Nissan's more advanced electropneumatic EGR system.[20]

Specifically, the Monte Carlo statistical simulation for a 2.8L prototype vehicle equipped with an advanced electropneumatic EGR system predicts that the vehicle will easily meet the 1.0 NO_x and 3.4 CO standards, but will fail the 0.41 HC standard.[21] Information in the record does not indicate that any other technological options are available that would be likely to enable this engine family to reduce HC emissions to the statutory level while still maintaining compliance with the statutory NO_x standard.[22] Granting Nissan a waiver, however, would also permit it to reduce HC emissions, smoke emissions, and engine wear using techniques that would be likely to have the effect of increasing NO_x.[23] Thus, I have determined that Nissan needs the waiver it has requested in order to use this diesel engine family in the 1981 model year.

With regard to the 1982 model year, Nissan has indicated that it does not expect to have solved all the problems with its EGR system so that it would be able to meet applicable standards.[24] There may be a number of approaches Nissan could use to reduce HC without failing to meet the NO_x and CO standards.[25] Nonetheless, if a waiver for model year 1982 is granted, Nissan will have the opportunity to further develop its emission control systems and to gain experience that will help it meet the emission standards in 1983.[26]

The data which Nissan has sumitted to support its position do not necessarily show that without a waiver to the maximum permissible NO_x standard of 1.5 gpm this engine family will not be able to meet in interim NO_x standard between 1.0 gpm and the maximum permissible 1.5 gpm in production. Nevertheless, a significant risk does exist that, were I to set an interim standard greater than 1.0 gpm but less than 1.5 gpm, Nissan may conclude that it needs to further reduce NO_x levels by using higher rates of EGR, thus potentially increasing particulate emissions.[27] As the public health discussion in this decision points out, I have concluded that increased particulate emission pose potentially greater health risks than increased NO_x emissions. As a result, I am setting an interim NO_x standard of 1.5 gpm because available information shows a significant risk that Nissan needs the waiver in order to keep down the rate of EGR it will use to meet the NO_x standard.

B. Endangerment to Public Health

In order to grant a waiver request, section 202(b)(6)(B)(i) requires me to determine that a waiver of the statutory NO_x standard of 1.0 gpm would not endanger public health. Congress intended my assessment of this criterion to include consideration of the potential health effects of unregulated pollutants from diesel engines as well as the health effects associated with increased NO_x emissions.[28]

1. Oxides of Nitrogen (NO_x)

In my first two decisions, I concluded that the potential impact on ambient NO_x levels resulting from NO_x waivers which I granted would not be significant.[29] Granting waivers for the vehicle classes listed above will not alter this conclusion. The potential impact on NO_x levels resulting from granting these additional waivers, even when combined with the impact from the waivers I granted earlier, will not be significant.

---

[11] Nissan App., p. I–2, II–18; Tr. 9.

[12] Nissan App., p. II–3, II–4, II–18, II–19; Tr. 10.

[13] Nissan App., p. II–80; Tr. 21.

[14] Nissan App., II–41.

[15] Nissan App., II–44 to II–48.

[16] Nissan App., II–66 to II–67.

[17] Nissan App. II–69; Tr. 26–29.

[18] Tr. 10, 35.

[19] Tr. 11.

[20] Summary of Nissan's Technological Capability, (hereinafter Appendix A) § V.

[21] Appendix A, § V.

[22] Nissan described attempts to reduce HC emissions in its prime electropneumatic EGR system but stated that no improvement has proven successful at achieving all emission standards simultaneously. Nissan App. at II–85. However, the EPA technical staff identified potential engine modifications that might be used by Nissan to reduce HC and particulates without having significantly adverse effects on NO_x. The technical staff could not fully evaluate these modifications since Nissan did not submit test data regarding these items that could be used to develop quantifiable projections of vehicle emissions. Appendix A § IV.

[23] Nissan App. at II–81.

[24] Tr. 23.

[25] See note 23, *supra*.

[26] Tr. 12–13. The waiver in 1982 will give Nissan an opportunity to phase-in its new NO_x control technology in that it will be able to use lower rates of EGR until it has eliminated problems associated with use of its electropneumatic EGR system at lower NO_x levels.

[27] Appendix A § IV.

[28] See, e.g., H.R. Rep. No. 294, 95th Cong., 1st Sess. 19, 237, 250–51 (1977); S. Rep. No. 127, 95th Cong., 1st Sess. 70 (1977).

[29] Orig. decision at 5488–89; second decision at 34722.

2. *Particulates*

My main health concern in these proceedings relating to emissions from diesel engines is over potential increased emissions of diesel particulates and focuses on the potential for an increase in the incidence of respiratory ailments, and the potential that organic components of the diesel particulates are carcinogenic.[30] These concerns warrant action, where appropriate, that would minimize particulate emissions from light-duty diesels. It is undisputed that the projected increase in diesel light-duty vehicle production will increase ambient total suspended particulates and consequently human exposure to respirable particulates.[31] This fact underscores my concern for action minimizing particulate emissions from light-duty diesels.

In my first two consolidated decisions, I noted that to the extent that waivers are granted, the applicants will be able to market diesel vehicles that emit more particulates than would gasoline-powered vehicles. However, my assessment of the risk posed by these emissions must be made in light of the potentially greater risk posed by the particulate emission levels that might result from waiver denial.[32] If I deny a waiver, an applicant may attempt to manufacture the diesels and successfully certify them in compliance with the 1.0 gpm NO_x standard. As part of an all-out effort to market vehicles complying with a 1.0 gpm NO_x standard, a manufacturer might decide to incorporate technology that places upward pressure on particulate emissions.[33]

Nissan indicated that without a waiver, it would not be able to market these diesel models in model years 1981 and 1982.[34] Upon further questioning, however, Nissan stated that because this engine family occupies a significant place in Nissan's marketing and sales plans, Nissan would continue its development efforts and attempt to market a diesel meeting the unwaived NO_x standard.[35]

Nissan indicated that it plans to use an EGR system to meet either a 1.0 gpm NO_x standard if the waiver is granted or a 1.5 gpm NO_x standard if the waiver is denied.[36]

Moreover, Nissan stated that at this point in its production schedule, the only modification it could make to bring NO_x emissions from its 1.5 gpm system down to 1.0 gpm is to increase the EGR rate.[37]

Nissan stated that vehicles in this engine family equipped with NO_x control systems employing a higher rate of EGR, emit more particulates than vehicles employing lower EGR rates.[38] EPA's technical analysis of the data submitted by Nissan confirms that for most of the vehicles in this engine family there is indeed an increase in particulate emissions when the EGR rate is increased.[39]

By granting a waiver and establishing a 1.5 gpm interim NO_x standard that Nissan will be able to meet without using increased EGR rate for its 2.8L engine family, I can avoid giving rise to the risk that Nissan will produce this engine family using the EGR system calibrated to a 1.0 gpm NO_x standard with higher particulate emissions. A waiver denial therefore could result in total particulate emissions being greater than if the waiver were granted. Because increased particulates pose potentially greater health risks than increased NO_x, I conclude that granting waivers for Nissan's 2.8L engine family, thereby precluding any need for Nissan to use increased EGR systems that exhibit higher particulate emissions, is more protective of the public health than waiver denial.[40]

C. Fuel Economy and Long Term Air Quality Benefit

Fuel economy and long term air quality considerations are contained in second and third criteria of section 202(b)(6)(B).[41] I conclude that Nissan's 2.8L diesel engine family will be capable of meeting or bettering Federal fuel economy standards both in the short and long term.[42] I also conclude that Nissan's engine family has the capability for long term air quality benefit.[43]

D. Final Decision and Amended Rule

Section 202(b)(6)(B) of the Act grants me the authority to waive the statutory standard of 1.0 gpm NO_x and to prescribe interim standards which provide that NO_x emissions may not exceed 1.5 gpm for any class or category of diesel light-duty vehicles or engines manufactured during model years 1981, 1982, 1983, and/or 1984 which meet the statutory waiver criteria. Based upon the foregoing discussion I am granting the requested waiver of the 1.0 gpm NO_x standard for Nissan's 2.8L engine family, for model years 1981 and 1982, and simultaneously promulgating an interim standard of 1.5 gpm for this engine family for model years 1981 and 1982.

Dated: December 23, 1980.

Douglas M. Costle,

Administrator.

[FR Doc. 81-264 Filed 1-5-81; 8:45 am]

BILLING CODE 6560-33-M

[30] Orig. decision at 5489; second decision at 34722. Although there is no current definitive epidemiologic evidence establishing cancer risk from exposure to diesel particulates, the uncertainty surrounding the potential health risk posed by diesel particulates warrants a cautious approach in regulating the vehicles which produce them.

[31] Diesel-powered vehicles emit particulates at a far greater rate than catalyst-equipped gasoline-powered vehicles. Orig. decision at 5489–5490; second decision at 34722.

[32] Orig. decision at 5489; second decision at 34722.

[33] Since the 0.6 gpm particulate standard does not take effect until 1982 (see footnote 6), a manufacturer could arguably increase the EGR rate in its 1981 model year diesel vehicles, thereby lowering the NO_x emissions from those vehicles below the 1.0 gpm standard, without concerning itself with violating any particulate standard. Moreover, the particulate standard I promulgated for the 1982 model year is a technology-based standard that reflects the greatest degree of particulate emission reduction achievable through the application of technology which I have determined will be available for a given model year, considering lead time and other constraints. 42 U.S.C. 7521(a)(3)(A)(iii). An upward pressure on particulate emissions from increasing the EGR rate still could present a risk to the public health, even though the increase in particulate emissions would not cause a manufacturer to be in violation of a particulate standard.

[34] Tr. 12, 16.

[35] Tr. 12, 15, 18, 23.

[36] Tr. 21, 23.

[37] Nissan App. I–7, 23.

[38] Nissan App. I–2, I–7; Tr–12, 13, 15, 16.

[39] Appendix A, § VI.

[40] I used the same reasoning in my Original decision at 5490–5492 and second consolidated decision at 34723 when granting waivers for Peugeot's and VW's engine families.

[41] Clean Air Act, as amended, § 202(b)(6)(B)(ii) and (iii), 42 U.S.C. 7521(b)(6)(B)(ii) and (iii) (Supp. I 1977). For a discussion of the methods by which I make the statutory determinations which these criteria require, see sections III(C) and III(D) of my original decision at 5493–5494.

[42] Appendix A. § IV, VI; Nissan App. 1–5, IV–1; and Tr. 13.

[43] Appendix A. § II. Nissan stated that with the aid of microprocessors that should be available by model year 1983, it believes it will be able to meet all applicable emission standards, including the 0.6 gpm standard EPA promulgated for particulates. Nissan App. I–7, Tr. 23, 36.

ENVIRONMENTAL PROTECTION AGENCY

[EN-FRL 1719-6]

40 CFR Part 86

Revised Motor Vehicle Exhaust Emission Standards for Oxides of Nitrogen (NO_x) for 1981-1982 Model Year Light-Duty Diesel Vehicles

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: This regulation establishes oxides of nitrogen (NO_x) emission standards for 1981-1982 model year light-duty vehicles belonging to certain diesel vehicle classes for which I have granted waivers from the standard otherwise applicable under section 202(b)(6)(B) of the Clean Air Act, 42 U.S.C. 7521(b)(6)(B).

EFFECTIVE DATE: February 5, 1981.

ADDRESS: Information relevant to this rule is contained in Public Docket EN-80-21 at the Central Docket Section of the Environmental Protection Agency (EPA), Gallery I, 401 M Street, S.W., Washington, D.C. 20460 and is available for review between the hours of 8:00 a.m. and 4:00 p.m. As provided in 40 CFR Part 2, EPA may charge a reasonable fee for copying services.

FOR FURTHER INFORMATION CONTACT: Mike Randall, Attorney/Advisor, Manufacturers Operations Division (EN-340), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 472-9421.

SUPPLEMENTARY INFORMATION: Section 202(b)(1)(B) of the Clean Air Act (Act), 42 U.S.C. 7521(b)(1)(B), requires that regulations applicable to NO_x emissions from light-duty vehicles or engines manufactured during or after the 1981 model year shall contain standards which provide that such emissions from vehicles or engines shall not exceed 1.0 gram per vehicle mile. Regulations implementing this requirement have established this NO_x standard.

Section 202(b)(6)(B) of the Act authorizes the Administrator, upon application by any manufacturer, to waive the statutory NO_x standard for the 1981 through 1984 model years for any class or category of light-duty diesel vehicles or engines for which the Administrator can make the required statutory findings. I must promulgate interim NO_x standards applicable to the subject light-duty diesel classes for those model years for which I have granted waivers.

Both Isuzu Motors Limited (Isuzu) and General Motors Corporation (GM) have also submitted requests for a waiver for one engine family each. The statutory criteria, my determinations with respect to the vehicle models covered by the waiver applications, and my decision to grant the waiver applications appear in the consolidated decision published along with this notice. In that decision, I granted waivers covering the following engine family for the 1981 and 1982 model years:

Manufacturer and engine family
Isuzu—1.8L
GM—1.8L

Having decided to grant waiver applications for these diesel vehicle classes, I am simultaneously promulgating regulations adopting emission standards not permitting NO_x emissions from 1981 and 1982 model year vehicles of these vehicle classes to exceed the prescribed levels. The public has received an opportunity to comment on the waiver applications at issue, and I have considered those comments in making the decision which requires the promulgation of this rule. For this reason, I find that providing notice and an opportunity to comment on this rulemaking before final promulgation is impracticable and unnecessary.

Note.—The Environmental Protection Agency has determined that this action does not constitute a major proposal requiring preparation of a Regulatory Analysis under Executive Order 12044.

In addition, because the decision accompanying this rulemaking is based on a detailed analysis indicating that this rulemaking will have a negligible effect on air quality, the Environmental Protection Agency has not prepared an Environmental Impact Statement to accompany this rulemaking.

Dated: December 23, 1980.

Douglas M. Costle,

Administrator.

40 CFR Part 86 is amended as follows:

Subpart A—General Provisions for Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles, 1977 and Later Model Year New Light-Duty Trucks and 1977 and Later Model Year New Heavy-Duty Engines

1. 40 CFR 86.081-8(a)(1)(iii) is revised to read as follows:

§ 86.081-8 Emissions standards for 1981 model year light-duty vehicles.

(a) * * *

(1) * * *

(iii) Oxides of nitrogen—1.0 grams per vehicle mile, except that: (A) Oxides of nitrogen emissions from 1981 model year light-duty vehicles manufactured by American Motors Corporation shall not exceed 2.0 grams per vehicle mile; (B) oxides of nitrogen emissions from light-duty diesel vehicles of the following 1981 model year engine families shall not exceed the prescribed levels:

Manufacturer	Engine family	Standard (gpm)
General Motors Corp	5.7 liter (L)	1.5
	1.8L	1.5
Daimler-Benz AG	2.4L	1.5
	3.0L naturally aspirated (NA).	1.5
	3.0L turbocharged (TC).	1.5
AB Volvo	2.4L NA	1.5
Peugeot	2.3L-TC-XD2S	1.5
Volkswagen AG	1.6L-NA-2250 pounds inertia weight (I.W.).	1.3
	1.6L-NA-2500 I.W.	1.4
	2.0L-NA-3000 I.W.	1.5
Nissan Motor Co.	2.8L	1.5
Isuzu Motors, Ltd	1.8L	1.5

* * * * * *

2. 40 CFR 86.082-8(a)(1)(iii) is revised to read as follows:

§ 86.082-8 Emissions standards for 1982 model year light-duty vehicles.

(a) * * *

(1) * * *

(iii) Oxides of nitrogen—1.0 grams per vehicle mile, except that: (A) Oxides of nitrogen emissions from 1982 model year light-duty vehicles manufactured by American Motors Corporation shall not exceed 2.0 grams per vehicle mile; (B) oxides of nitrogen emissions from light-duty diesel vehicles of the following 1982 model year engine families shall not exceed the prescribed levels:

Manufacturer	Engine family	Standard (gpm)
General Motors Corp	5.7 liter (L)	1.5
	1.8L	1.5
Daimler-Benz AG	2.4L	1.25
	3.0L naturally aspirated (NA).	1.5
	3.0L turbocharged (TC).	1.5
AB Volvo	2.4L NA	1.5
Peugeot	2.3L-TC-XD2S	1.5
Volkswagen AG	1.6L-NA-2250 pounds inertia weight (I.W.).	1.3
	2.0L-NA-3000 I.W.	1.5
	1.6L-TC-2250 I.W.	1.3
	1.6L-TC-2500 I.W.	1.4
	2.0-TC-3000 I.W.	1.5
Nissan Motor Co	2.8L	1.5
Isuzu Motors, Ltd	1.8L	1.5

(Secs. 202 and 301(a) of the Clean Air Act, as amended, 42 U.S.C. 7521, 7601(a)(Supp. I 1977))

[FR Doc. 81-265 Filed 1-5-81; 8:45 am]

BILLING CODE 6560-33-M

ENVIRONMENTAL PROTECTION AGENCY

[NEW-FRL 1719-6a]

Applications for Waiver of the 1981-82 Model Year Oxides of Nitrogen Emission Standard for Light-Duty Diesel Motor Vehicles—Fifth Decision of the Administrator

I. Introduction

This is the fifth decision I have issued under section 202(b)(6)(B) of the Clean Air Act, as amended (Act)[1] regarding applications from automobile manufacturers for waiver of the 1.0 gram per mile (gpm) oxides of nitrogen (NO_x) emission standard scheduled to apply to 1981 and subsequent model year light-duty diesel vehicles and engines.

As the introduction to the first diesel NO_x waiver decisions explains, section 202(b)(1)(B) of the Act establishes the standards applicable to NO_x emissions from light-duty vehicles and engines manufacturered during and after model year 1977.[2] This section requires the Administrator of the Environmental Protection Agency (EPA) to promulgate regulations containing standards which provide that NO_x emissions may not exceed 2.0 gpm for model years 1977 through 1980, and may not exceed 1.0 gpm for 1981 and later model years.

Section 202(b)(6)(B) of the Act provides that, upon the petition of a manufacturer, the Administrator may waive the 1.0 gpm NO_x standard to a level not to exceed 1.5 gpm for any class or category of diesel-powered light-duty vehicles and engines manufactured during the four model year period beginning with model year 1981. In order to obtain a waiver, the manufacturer must show that the waiver is necessary to permit the use of diesel engine technology in the class or category of vehicles or engines for which it has requested a waiver. Moreover, the Administrator must determine:

(i) That such waiver will not endanger public health,

(ii) That such waiver will result in significant fuel savings at least equal to the fuel economy standard applicable in each year under the Energy Policy and Conservation Act ("EPCA"), and

(iii) That the technology has a potential for long-term air quality benefit and has the potential to meet or exceed the average fuel economy standard applicable under EPCA at the expiration of the waiver.[3]

On April 8, 1980, I received an application from Isuzu Motors Limited (Isuzu) for waiver of the 1981 and 1982 1.0 gpm NO_x standard for its 1.8 liter (L) diesel engine family. EPA held a public hearing on Isuzu's application on May 8, 1980. Based upon the transcript of that hearing and other information contained in the record on Isuzu's waiver request, I denied Isuzu's application because I concluded Isuzu had failed to establish that the waiver requested was necessary to permit the use of diesel engine technology for its 1.8L engine family. On October 24, 1980, I received from Isuzu a petition for reconsideration of my decision denying its waiver application.

On October 30, 1980, General Motors Corporation (GM) also applied for a waiver covering 1981 and 1982 model year vehicles using the same 1.8L diesel engine, which GM plans to purchase from Isuzu. GM intends to use this diesel engine in some of its 1981 and 1982 model year Chevettes. Both manufacturers' waiver requests included additional emission data on the 1.8L diesel engine family. EPA held public hearings on these waiver requests on November 17, 1980. The transcripts of these hearings, the materials submitted by the applicants in their original and follow-up waiver requests, and all other information upon which I have based my decision on this set of waiver requests are included in EPA Public Docket EN-80-21. The materials included in the dockets for all prior diesel NO_x waiver proceedings are incorporated by reference into this public docket.

II. Summary of Decision

A. Waiver Applications Granted

The applications which I have decided to grant cover the following engine families for the 1981 and 1982 model years:

Waiver Applications Granted

Manufacturer	Engine family
Isuzu	1.8L
GM	1.8L

As discussed more fully below, I have concluded that applications covering this engine family meet each of the statutory criteria for receiving a waiver for the years noted. I am prescribing an interim NO_x standard of 1.5 gpm for Isuzu and GM for these model years.

III. Discussion

A. Assessing Need for Waivers

Section 202(b)(6)(B) of the Act expressly assigns to an applicant the burden of showing that the waiver is necessary to permit the use of diesel engine technology in a particular class or category of vehicles or engines. The major issue I must address under this criterion is whether the applicant has shown that unless I grant the waiver, the engine family which the waiver request covers will not be able to meet applicable emission standards, even with the addition of any device, equipment or aspect of diesel engine technology presently available or expected to become available during the period covered by the waiver request.

1. *Decison Methodology*

The methodology this decision employs to assess an engine family's need for a waiver is the same as the methodolgy I used in my first two consolidated diesel NO_x waiver decisions.[4] This methodology includes an evaluation of the effect of NO_x emission controls on emissions of particulate matter. This evaluation relies on information supplied by applicants in this proceeding, and by parties commenting in the diesel particulate rulemaking proceedings, as well as on other information contained in the record for this decision.[5]

2. *Individual Applications*

a. *Isuzu Application*

Based upon technical analysis of the information in Isuzu's original waiver application, I denied Isuzu's waiver request because the analysis indicated that its 1.8L diesel engine without EGR NO_x control systems could still certify at a 1.0 gpm NO_x standard by incorporating the available technological improvement of advanced injection timing.[6] However, Isuzu has submitted information in its petition for reconsideration to show that this engine family will not be able to meet the 1.0 gpm NO_x standard. Isuzu's new information indicates that advancing injection timing on the 1.8L engine will

[1] 42 U.S.C. 7521(b)(6)(B) (Supp. I 1977).

[2] The first consolidated decision was published at 44 FR 5480 (January 23, 1980) (hereinafter "Orig. decision"). The second consolidated decision was published at 45 FR 34718 (May 22, 1980) (hereinafter "Second decision"). The third decision was published at 45 FR 65490 (October 2, 1980). The fourth decision was signed on December 23, 1980.

[3] For a discussion of the Congressional purpose behind this provision, see the discussion accompanying notes 2 and 3 of my original decision at 5480. EPA published guidelines for the submission of applications under this waiver provision at 43 FR 30341 (July 14, 1978) (hereinafter "Guidelines").

[4] For a more complete discussion of the methodology employed, see Orig. decision at 5484-5485.

[5] EPA Public Docket EN-80-21 (EPA Public Docket OMSAPC-78-3 contains the record for the diesel particulate rulemaking).

[6] 45 FR 65491 (Oct. 2, 1980).

not result in a NO_x reduction.[7] Moreover, the data suggest that advancing injection timing can result in lower fuel economy and higher HC and particulate emissions.[8] Thus, I now have concluded that simply advancing injection timing will not enable this engine family meet a 1.0 gpm NO_x standard in model year 1981.

Without using a factor for advanced injection timing, a Monte Carlo statistical analysis of available extended-mileage emission data on prototype vehicles equipped with Isuzu's 1.8L engine projects that this engine family cannot certify for the 1981 model year at a 1.0 gpm NO_x standard.[9] In addition, Isuzu's prototype vehicle tested specifically for certification purposes for 50,000 miles failed to meet the 1.0 gpm NO_x standard.[10]

Some information in Isuzu's waiver application indicated that increasing this engine family's combustion chamber area ratio (i.e., the surface area of the combustion chamber compared to its volume) to 1.2 and advancing injection timing might help reduce NO_x emissions.[11] Isuzu explained, however, that increasing the combustion chamber area ratio to 1.2 and advancing injection timing in order to meet the 1981 NO_x standard will leave Isuzu's 1.8L engine unmarketable due to unacceptable levels of noise, smoke, and acceleration.[12] Moreover, my analysis of the record does not identify any other potentially available engine modifications that would be likely to enable this engine family to meet the 1981 model year statutory NO_x standard.

Isuzu has stated that its EGR NO_x control systems are very effective in meeting the 1.0 gpm NO_x standard, but they create engine durability difficulties and a 50% increase in particulates.[13] Although Isuzu believes its EGR technology will be sufficiently advanced by 1983 to meet the 1983 1.0 gpm NO_x and 0.6 gpm particulate standards, it stated it has no prospect of perfecting its EGR system for use on its 1.8L engine during the period covered by Isuzu's waiver request.[14] Since necessity for waivers is present when the only available emissions control technology capable of achieving necessary emissions reductions has the potential to cause unacceptable engine wear, I conclude that, despite the NO_x reduction capabilities of Isuzu's 1981 model year EGR system, a waiver is necessary for this Isuzu engine family for the 1981 model year.

For the 1981 model year, EPA's analysis projects that vehicles in this engine family could certify at a 1.2 gpm NO_x standard without incorporating any available EGR NO_x control system.[15] Isuzu, however, asserted that this engine family needs a waiver of the NO_x standard to 1.5 gpm in order for Isuzu to have adequate confidence that production vehicles of this engine family would meet applicable NO_x emission requirements.[16]

The data which Isuzu has submitted to support its position do not necessarily show that without a waiver up to 1.5 gpm this engine family will not be able to meet applicable NO_x emission requirements in production. Nevertheless, because of Isuzu's expressed position, a significant risk does exist that, were I to set an interim standard less than 1.5 gpm, Isuzu could conclude that it needs to further reduce NO_x levels by using EGR technology, thus tending to place an upward pressure on particulate emissions. As the public health discussion in this waiver decision points out, I have concluded that increased particulate emissions pose potentially greater health risks than increased NO_x emissions. As a result, I am setting an interim NO_x standard of 1.5 gpm because available information shows that a significant risk exists that Isuzu needs the waiver to minimize the likelihood that it will use EGR to meet any lower NO_x standard.[17]

With regard to the 1982 model year, Isuzu has indicated its intent to use California as a proving ground for technology designed to achieve NO_x emission levels below 1.0 gpm. Isuzu would then extend the technology of its 1982 California light-duty diesel vehicles to its 49-state models in the 1983 model year. I find that this phase-in period is necessary for Isuzu to identify and correct quality control problems that may arise with the application of the new control technology.[18]

b. *GM's Application*

GM intends to purchase Isuzu's 1.8L engine for use in its 1981 and 1982 model year Chevettes pursuant to a contractual agreement between GM and Isuzu.[19] Under this agreement, GM has no control over the design or development of the engine, and it may not make any substantial design changes to the engines after they have been purchased.[20] Isuzu develops and applies all calibrations on the engine.[21] Moreover, GM has indicated that due to design and tooling differences, EGR technology available for controlling NO_x on GM's V–8 diesel engines is inapplicable to the Isuzu 1.8L engine family.[22] Consequently, given the limited amount of lead time available to GM to explore other technological options for improving NO_x emission levels from the vehicles for which it plans to use diesel technology, the same analysis I used to assess Isuzu's waiver application applies to GM's application, and I conclude that a waiver of the 1981 and 1982 NO_x standard to 1.5 gpm is necessary to permit this engine family to comply with applicable NO_x emission requirements.

B. Endangement to Public Health

In order to grant a waiver request, section 202(b)(6)(B)(i) requires me to determine that a waiver of the statutory standard of 1.0 gpm NO_x wpuld not endanger public health. Congress intended my assessment of this criterion to include consideration of the potential health effects of unregulated pollutants from diesel engines as well as the health effects associated with increased NO_x emissions.[23]

1. *Oxides of Nitrogen (NO_x)*

In my first two decisions, I concluded that the potential impact on ambient NO_x levels resulting from NO_x waivers which I granted would not be significant.[24] Granting waivers for the engine families listed above will not alter this conclusion. The potential

[7] The before and after emission tests results which Isuzu obtained on a vehicle from this engine family with and without the advanced injection timing support this conclusion. Transcript of Nov. 19, 1980 Public Hearing on the Reconsideration of Waiver Application of 1981 and 1982 Model Year Light Duty Diesel NO_x standards (hereinafter "Tr.") 112; Isuzu's Petition for Reconsideration p. 7.

[8] Tr. 59; Isuzu's Petition for Reconsideration p. 9.

[9] See unpublished Technical Appendix (Tech App.) to my third NO_x decision, p.3, EPA Public Docket EN–80–6.

[10] Isuzu's Petition for Reconsideration, p. 42.

[11] Isuzu Motors Application for Waiver of the NO_x Emission Standards for Light Duty Diesel Engines, April 1, 1980, Appendix B–15.

[12] Tr. 42. Isuzu also stated that insufficient lead time was available to permit it to change the area ratio for this engine family in time for its scheduled start of 1981 model year production. Tr. 13.

[13] Tr. 13, 59.

[14] Tr. 13.

[15] For a more complete discussion of the methodology employed, see Orig. decision at 5484–5485.

[16] Tr. 58, 59.

[17] Cf. Second decision at 34721.

[18] The California phase-in is necessary for Isuzu to mitigate the risks of national production, such as a recall of the national fleet, should it turn out that diesel vehicles with previously untried technology experience problems in complying with applicable emission standards in use. See discussion of the need for California phase-in in my original decision at 5485–5486, and my second decision at 34721.

[19] 45 FR 65491.

[20] Tr. 104.

[21] Tr. 52, 104.

[22] Tr. 120, 121.

[23] See, e.g., H.R. Rep. No. 294, 95th Cong. 1st Sess., 19, 237, 250–51 (1977); S. Rep. No. 127, 95th Cong., 1st Sess. 70 (1977).

[24] Orig. decision at 5488–89; second decision at 34722.

impact on NO_x levels resulting from granting these additional waivers, even when combined with the impact from the waivers I granted earlier, will not be significant.

2. *Particulates*

My main health concern in these proceedings relating to emissions from diesel engines is over potential increased emissions of diesel particulates and focuses on the potential that organic components of the diesel particulates are carcinogenic.[25] These concerns warrant action, where appropriate, that would minimize particulate emissions from light-duty diesels.

It is also undisputed that the projected increase in diesel light-duty vehicle production will increase ambient total suspended particulates and consequently human exposure to respirable particulates.[26] This fact underscores my concern for action minimizing particulate emissions from light-duty diesels.

In my first two consolidated decisions, I noted that to the extent that waivers are granted, the applicants will be able to market diesel vehicles that emit more particulates than would gasoline-powered vehicles. However, my assessment of the risk posed by these emissions must be made in light of the potentially greater risk posed by the particulate emission levels that might result from waiver denial.[27] If I deny a waiver, an applicant may attempt to manufacture the diesels and successfully certify them in compliance with the 1.0 gpm NO_x standard. As part of an all-out effort to market vehicles complying with a 1.0 gpm NO_x standard, a manufacturer might decide to incorporate technology that places upward pressure on particulate emissions.[28] This is the type of health risk I sought to avoid in my first two decisions.[29]

Isuzu has indicated that it and its dealers have made a substantial financial commitment to produce and promote this engine family for the domestic automobile market,[30] thereby creating a strong incentive for Isuzu to attempt to certify and market its 1.8L engine without a waiver. GM has stated that it has made a significant financial investment in tooling, engineering, and preparation costs to produce and market the 1.8L engine purchased from Isuzu, in the United States. Citing its quarterly financial statements, GM has also indicated that it is critical that it market a small fuel-efficient diesel engine at this time.[31] In order to remain on an equal footing with its competitors in this engine displacement class, GM has a strong incentive to attempt to certify and market the 1.8L engine even if a waiver is denied.

Isuzu has indicated that the technology it most likely would attempt to apply if I did not grant the waivers requested would involve adding currently available EGR NO_x control technology to the 1.8L engine Isuzu and GM intend to use for the U.S. market. Use of this technology would tend to place an upward pressure on particulate emission.[32]

By establishing a NO_x standard that Isuzu and GM will be able to meet without employing diesel technology using EGR for this diesel engine family, I can avoid giving rise to the risk that Isuzu and GM will market this diesel engine family or one like it under a 1.0 gpm NO_x standard with higher particulate emissions. Because increased particulates pose potentially greater health risks than increased NO_x, I conclude that granting waivers for Isuzu and GM, thereby precluding any need for the use of EGR systems that put upward pressure on particulates, is more protective of the public health than waiver denial.

C. Fuel Economy and Long Term Air Quality Benefit

Consideration of fuel economy and long term air quality benefit are required by the second and third criteria of section 202(b)(6)(B).[33] I conclude that the 1.8L engine families covered by the applications of Isuzu and GM are capable of meeting or bettering the fuel economy standards both in the short and long term.[34] Moreover, both Isuzu and GM have indicated that each 1.8L engine family covered by their respective applications has the potential to meet applicable standards at the expiration of the waiver period.[35] Therefore, I conclude that the 1.8L engine family covered by these applications has the capability for long term air quality benefit.

D. Final Decision

Section 202(b)(6)(B) of the Act grants me the authority to waive the statutory standard of 1.0 gpm NO_x and to prescribe interim standards which provide that NO_x emissions may not exceed 1.5 gpm for any class or category of diesel light-duty vehicles or engines manufactured during model years 1981, 1982, 1983, and/or 1984 which meet the statutory waiver criteria. Based upon the foregoing discussion I am granting the requested waiver of the 1.0 gpm NO_x standard for Isuzu's 1.8L engine family, and GM's 1.8L engine family for model years 1981 and 1982.

Dated: December 23, 1980.

Douglas M. Costle,

Administrator.

[FR Doc. 81-265 Filed 1-5-81; 8:45 am]

BILLING CODE 6560-33-M

[25] Orig. decision at 5489; second decision at 34722. Although there is no current definitive epidemiologic evidence establishing cancer risk from exposure to diesel particulates, the uncertainty surrounding the potential health risk posed by diesel particulates warrants a cautious approach in regulating the vehicles which produce them. See discussion in Orig. decision at 5490.

[26] Diesel-powered vehicles emit particulates at a far greater rate than catalyst equipped gasoline-powered vehicles. Original decision at 5489–5490; second decision at 34722.

[27] Orig. decision at 5490; second decision at 34722.

[28] Since the 0.6 gpm particulate standard does not take effect until 1982 (see footnote 6) a manufacturer could arguably increase the EGR rate in its 1981 model year diesel vehicles, thereby lowering the NO_x emissions from those vehicles below the 1.0 gpm standard, without concerning itself with violating any particulate standard. Moreover, the particulate standard I promulgated for the 1982 model year is a technology-based standard that reflects the greatest degree of particulate emission reduction achievable through the application of technology which I have determined will be available for a given model year, considering lead time and other constraints. 42 U.S.C. 7521(a)(3)(A)(iii). An upward pressure on particulate emissions from increasing the EGR rate still could present a risk to the public health, even though the increase in particulate emissions would not cause a manufacturer to be in violation of a particulate standard.

[29] For fuller discussion of this point, see pages 5490, 5492 of my original decision.

[30] Tr. 17.

[31] Tr. 107, 108.

[32] See text accompanying note 8, *supra*. Note also that if I were to deny this waiver request, GM might decide to procure diesel technology from another supplier of diesel engines which emit particulates at higher rates. Indeed, the particulate emissions data Isuzu supplied for its 1.8L engine family without EGR indicated that this engine family emits particulates at a very low rate compared to diesel engine families which other manufacturers plan to market. Isuzu's Petition for Reconsideration, p. 42.

[33] * * *

[34] See Tech. App. to my third NO_x decision, p. 21. EPA Public Docket EN–80–6.

[35] Tr. 54, 61–62, 135.